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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH, AND DEVELOPMENT

FBIS FOREIGN BROADCAST INFORMATION SERVICE

JPRS-TTP-86-026

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WORLDWIDE REPORT
TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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HONG KONG

BRIEFS

SUPERTELEX INTRODUCED--CABLE and Wireless, which has a virtual monopoly on the supply of telex machines, is introducing an updated version, Supertelex 2021, through a campaign using four large-size print advertisements. The product launch is clearly part of Cable and Wireless's answer to the increasingly popular facsimile transmission, which nevertheless retains the advantage of being able to transmit graphics. But Jeremy Green, account director of Ted Bates, Cable and Wireless's advertising agency, while admitting facsimile transmission has affected the telex business, said it was not the reason the company has decided on the campaign. "It is simply that the product was not available before," he said. Supertelex offers a big improvement on the old machine. It has done away with the messy tape and acts more like a word processor, enabling corrections to be made on the screen. Cable and Wireless claims to have supplied all but 400 of the existing 27,000 telex machines in Hongkong. [Excerpts] [Hong Kong SOUTH CHINA MORNING POST in English 19 Sep 86 Supplement p 3] /12379

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BETTER SIGNAL EQUIPMENT DESIGNED BY LOCAL ENGINEERS

Hanoi QUAN DOI NHAN DAN in Vietnamese 19 Aug 86 p 2

[Article by Quang Dau: "A New Face of the San Diu Tribe"]

[Text] According to the state electronics program, the manufacture of channel couplers is urgently required by the realities of combat and production. The theme bearing the 48-04-05-04 symbol has been implemented at the M3 Factory of the Signal and Liaison Command. One of the authors of this apparatus is Sen Cpt Luu Thi Kim Van, a member of the San Diu tribe. The GK-3 apparatus won the gold medal at the 1985 national economic and technical exhibition and was recently rated rather high and awarded the category 2 quality seal by the State Technical Inspection Commission.

According to Lt Col Vo Dang, director of the M3 Factory, while launching a campaign along Route 9 in southern Laos during the anti-U.S. resistance, he and his comrades-in-arms wanted to hide a V803 apparatus (a Hungarian-made piece of signal equipment) quickly in a cave to avoid the enemy bombers' attack but found no means of getting it through the mouth of the cave because it was too cumbersome, and also together with its accessories rather heavy. In view of the situation in Vietnam, it has thus been necessary to update this equipment to suit it to the conditions of mobile field combat. Therefore, ever since 1981, the 48-04-05-04 program has been implemented with the technical cooperation of Pham Ngoc Thu, MS, of the Signal and Liaison College. At the M3 Factory, a group of engineers led by engineer cum deputy director Mai Dang urgently started designing a new apparatus.

I asked engineer Luu Thi Kim Van to tell about the innovations she had effected in designing the GK-3 apparatus. She said:

"To reduce the cost, we kept some parts of the V803 apparatus intact and redesigned only four other parts. I assumed responsibility for the automatic adjustment system and the selective network. It must be noted that in a signal apparatus, the selective network presents relatively great difficulties, especially because our country lacks many essential materials such as ferrite. Therefore, it is more difficult to master this part."

[Question] "As a matter of fact, you have mastered the selective network?"

[Answer] "Yes, we made some definite progress during its manufacture...."

Ao San Hamlet (Thanh Cong Village, Pho Yen District, Bac Thai Province) was situated on a low hilly land with a dry and infertile soil and a score of thatch-roofed earthen-walled cottages. It was there that Kim Van was born and grew up. She is a halfcaste; her father was a San Diu tribesman and her mother a Vietnamese. She was endowed with what people usually call "Innate intelligence." She attended school straight from the primary class to Grade 10 and always ranked first or second in her classes. She ranked first [illegible] the 1970 graduation examination from the level 3 general school of Pho Yen. Then, on hearing that the provincial student recruitment commission chose her for further study abroad, this pretty, nubile girl was on tenterhooks while all the inhabitants of her poor hamlet were filled with joy. The village patriarch said: "Our ancestors knew only how to whittle a curved piece of wook to make a plow to till the wet ricefields. Today, our children know how to make a sophisticated machine. How glad we are to see that!"

Luu Thi Kim Van went on saying: "Luckily, I was admitted to one of the oldest technical colleges in Hungary--the [Kandokiman] College--and my graduation thesis dealt with designing a system which would automatically adjust the electric current intensity in carrier-wave signal apparatuses. In early 1976, I was assigned to the army and worked at the M3 Signal Equipment Factory. The theme for the GK-3 channel coupler was similar to what I wrote in my former thesis. At that time, I made calculations on paper; now I had only to perfect them and turn them into reality. This coincidence was really interesting and could be considered a stroke of good luck. The GK-3 was more advanced than the V803 because semiconductor circuits were replaced by microcircuits, which made it possible to meet with certainty the initial requirements about small else, neatness, mobility, stability, and greater reliability."

Luu Thi Kim Van added: "You know, we toiled and toiled with the set of frequency selectors and converters for more than half a year. At first, I calculated according to the mobile parametric method but found that the result was not highly accurate so I switched over to the wave control method which was more complex. Another difficulty was that we did not have the needed materials. For example, we had to redo almost everything from the start just because of the need to replace the quartz selector set by an induction system. In the daytime, I came to the factory to do the principal tasks in the technical bureau. At night, it was quieter so I could devote all my efforts to the GK-3. Of course, I was not the only one who worked hard. Mr De was in charge of audio frequencies, Messers Trac and Tien created carrier wave frequencies, and Mr Ket handled the metering system. All of them took pains to do their jobs. But the result obtained so far has filled us with great joy so we forget all hardships and are even ecstatic about it. At present, we are continuously working to perfect the GK-3 to improve its quality, and we are designing multichannel couplers such as the GK-12."

Out of curiosity, I asked: "How about your family affairs--your husband and children? Do they hamper you?"

Kim Van laughed and shook her head: "No, my children are growing and their maternal grandparents have lent me a hand. As for Thao, my husband, he is also an engineer at the factory. He was my former schoolmate at the [Kando] College."

There is much more to say about this woman engineer. She was admitted to party membership while enthusiastically researching and designing the GK-3. She held the emulation combatant title for many years and was a representative of the yound generation in the Signal Service at the Youth Union national congress.

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CANADA

TASK FORCE ON BROADCASTING POLICY ISSUES REPORT

Criticism of Private Broadcasters

Toronto THE GLOBE AND MAIL in English 23 Sep 86 pp A1, A2

[Article by Edward Greenspon]

[Text] Here are highlights of the Task Force on Broadcasting Policy:

- Creation of an all-news channel by the CBC to be carried on the basic cable service and financed through advertising and a 25 cents a month charge to cable subscribers. This would raise about $20-million a year.
- Gradual phasing out of foreign programming on the CBC with an ultimate goal of 95 per cent Canadian content. The loss of commercial revenue could reach as high as $140-million.
- Creation of a new channel on cable called TV Canada to show more programs devoted to the regions, children, arts, documentaries and repeats of the best Canadian programs shown by other broadcasters.
- Tougher regulation of private broadcasters to ensure better quality Canadian programming and increase Canadian content between 7 p.m. and 11 p.m. to 45 per cent.
- Extension of CBC services for native peoples as well as francophone services outside Quebec and CBC Stereo radio service.
- A 5 per cent tax on the sale or rental of audio and video cassettes, VCRs and satellite receiving equipment.
- To encourage commercial support for Canadian programs, a 150 per cent business tax deduction for advertising on domestic children's, drama, documentary, variety and performing arts shows. The cost will not exceed $29-million a year.

country's cultural fabric, according to the Task Force on Broadcasting Policy.

"The contribution of private Canadian broadcasters to quality Canadian performance programming has not been among the great elevating successes of the Canadian broadcasting system," the long-awaited report says.

The task force, headed by Gerald Caplan and Florian Sauvageau, places as much blame on regulators as it does on the industry.

The Canadian Radio-Television and Telecommunications Commission has coddled and protected private broadcasters, the task force says, and the public airwaves often are treated as if they are private property.

The task force did not hear any pleas from broadcasters to relieve the industry of regulation and let free markets prevail, its authors noted.

The report's 65-page chapter on private TV reveals a great deal of new information on the financial state of Canadian broadcasters. It confirms the judgment that television is a licence to print money.

Even during the recession, the printing presses hardly missed a turn as virtually all the country's 79 private stations returned profits to their owners.

Television revenues nearly doubled to $898.8-million a year between 1979 and 1984. In 1984, TV broadcasters took home $163.3-million in pre-tax profits, about two-thirds of it by the country's 13 biggest stations.

The robust performance of the industry is aided considerably, the report says, by two government and regulatory policies that reward broadcasters without demanding anything in return.

First, the federal government's 1976 ruling that Canadians advertising on U.S. border stations cannot deduct the expense off their taxes as they can if advertising in Canada, adds between $35.8-million and $41.8-million a year to television revenues, the task force estimates.

Secondly, the practice of simulcasting — allowing Canadian stations to substitute their signals and commercials for U.S. ones on cable when the same show is broadcast on both channels — adds another $53-million a year to broadcasters' coffers.

The report says the two measures are counter-productive to Canadian programming, but endorses their retention for commercial reasons.

The industry also is protected by several CRTC practices that the task force suggests contradict the federal Broadcasting Act. These include the CRTC's refusal to hear competing bids when broadcast licences come up for renewal; the fact that a television licence has never been revoked, regardless of a broadcaster's record in meeting obligations; and the commission's unwillingness to entertain other bidders when a broadcaster wishes to sell a licence.

Though private broadcasters have "the lion's share of resources in Canadian broadcasting," they spend far less than the Canadian Broadcasting Corp. on Canadian programming, the task force says.

The private broadcasters spend six times as much as the CBC on foreign shows

Most of the foreign programs are U.S. feature films or TV series, while the Canadian content on private stations is made up largely of news, public affairs and sports. Canadian dramatic productions get short shrift, the task force says, receiving one in seven dollars spent on these types of programs.

"It is not, and never has been, a question of English Canadians being offered their own attractive and well-financed Canadian programs and rejecting them."

The licencing of new independent stations in many cities has not improved the situation at all, the task force says. They were found to be even more reliant than CTV affiliates on foreign programming.

The private broadcasters are motivated understandably enough by economics, the report says.

The general rule of thumb is that it costs 10 times as much to make a Canadian show as to buy an American one. Even if Canadian shows are popular with their audience "the business-like thing to do is to import."

The key regulatory issue, the task force says, is where to strike the balance between such business-like decisions and the public's right to expect quality Canadian programming in exchange for granting broadcasters the use of public frequencies and protection from competition.

The task force raps the knuckles of the CRTC for not being tough enough in its defence of a distinctly Canadian broadcast system.

Most of the necessary regulations for more quality Canadian programming in peak viewing hours exist, but are not implemented, the report says.

"The task force is in full and enthusiastic agreement with the CRTC's policy. But is the CRTC?" the report's authors ask.

The task force is particularly concerned by a dearth of Canadian programming between 7 p.m. and 11 p.m. The CRTC defines prime time as the hours from 6 p.m. to midnight, allowing broadcasters to put most of their 50 per cent Canadian quota on during the less popular first and final hours.

The task force would cut down on that practice by insisting that at least 45 per cent of the 7 p.m. to 11 p.m. period be devoted to Canadian programs.

In addition, the report recommends a narrower definition of what constitutes a Canadian program.

The task force wants the CRTC to require broadcasters to meet individual minimum standards on Canadian programming, based on their specific abilities, rather than general guidelines.

For Canadian productions to thrive on television, the task force says the CRTC must encourage the transfer of greater resources to networks from individual stations.

It outlines how CTV affiliates deprive their network of the funds necessary to produce quality Canadian programs and recommends that the CRTC bundle the individual stations and network in a single package in its deliberations.

Call for More Canadian Content

Toronto THE TORONTO STAR in English 23 Sep 86 pp A1, A10

[Article by Martin Cohn]

[Text]

OTTAWA — The "Canadianizing" of television and radio is essential to preserving the country's national identity, say the authors of a mammoth review of the broadcasting industry.

In what is described as a "call to arms," they called on television viewers, government decision makers and broadcast executives to find the money for improved Canadian programming.

"We want there to be shows by Canadians, for Canadians and about Canadians," Gerald Caplan, co-chairman of the federal task force on broadcasting, said yesterday.

Large gaps have opened up in documentary production, independent filmmaking, the arts, childrens' shows, news and current affairs, Caplan told a news conference.

The task force calls for improved funding of the Canadian Broadcasting Corporation — and a stronger commitment from private networks — to give viewers a wider choice of Canadian television programs.

Caplan and co-chairman Florien Savageau called for a new TV Canada channel to consolidate programming by public broadcasters such as the CBC and provincial educational networks. They also recommended a CBC all-news channel.

Both new channels could be paid for through new cable TV fees of $1 a month, a price which Caplan said was well worth paying. "In our view that's a pretty good bargain," he told the news conference.

"There are costs to borne for Canadianizing the broadcasting system, we make no bones about it."

Communications Minister Flora MacDonald said the report's recommendations would form the basis for a new Broadcasting Act within the next two years, to replace the existing 20-year-old laws.

"I would hope that we would be able to move quickly enough so that we would see legislation within a year," she said in an interview.

"This is taking us well into the 21st century." The issue is vital "because of the fundamental nature of broadcasting to the survival of this country."

While MacDonald declined to comment on specific recommendations, she said the report will force Canadians to "tackle the two questions of Canadian content and cost."

In it's report, the task force recommended that the proposed new channels produce the Canadian programs that private networks have failed to deliver; the private networks, in turn, would absorb the American series cast off by the CBC, so that viewers would still have a choice of what to watch.

"We know that Canadians want to watch Canadian programs. They don't want to watch any fewer American programs. We're not naive about that," Caplan said.

"Canadians love those programs and nothing in our recommendations will limit their access to them. What they want, though, is more Canadian shows. The heart of our new strategy, without any question, is a properly funded CBC," Caplan said.

However, it is time for the CBC to concentrate on its mandate of giving viewers a better picture of the country and the world through Canadian eyes.

"It is ludicrous that the CBC continues to show American programs which are available in such abundance that tens of thousands of Canadians have access, each night, to more American programs than the people living in Manhattan," Caplan told reporters. "There's no case for the CBC to continue showing those programs . . . that's the key to our new system."

Private networks

The task force report also suggests re-allocating some of the $3 billion in money that changes hands in the broadcast industry. It also calls on private networks to shoulder more responsibility in return for the protectionist measures — worth an estimated $100 million in revenues — erected by the government to protect their advertising markets from American competition.

Private networks, which can trace at least $100 million in guaranteed revenues to their sheltered markets, should increase their share of high-quality domestic productions, Caplan said.

Caplan said these goals are within reach if the government — and television viewers — accept the challenge of re-orienting the broadast system.

"The question is simply a matter of will," he told reporters. "We're saying there's lots of money in the system. The government is in a position to redistribute it . . Whether they will bite the bullet, it's not up to us to decide."

However, Caplan predicted the Progressive Conservative government, which commissioned the task force report nine months ago, would act on the recommendations.

Liberal communications critic Sheila Finestone also praised the report for taking a reasonable approach to the problem. But she openly wondered whether Canadians, who are "being nickeled and dimed to death," would be willing to pay an extra $12 a year to support domestic programming. Noting that the government has commissioned a series of other task forces, she called on MacDonald to act quickly on this latest report.

New Democratic Party communications critic Lynn McDonald criticized the report for failing to recommend cuts in television advertising. "Canadians would like to see less advertising, and less intrusive advertising," she said.

McDonald also expressed pessimism about the chances of government action in the wake of the report, and pointed to previous budgetary cuts at the CBC as an indication of Ottawa's misguided policies.

Improvement of CBC

Toronto THE TORONTO STAR in English 23 Sep 86 p A10

[Article by David Crane]

[Text]

The Canadian Broadcasting Corp. needs more money, better management and improved labor relations to carry out its central role in "assuring that Canadians have a truly Canadian broadcasting system," the task force report on broadcasting says.

The CBC is operating in an atmosphere of crisis and antagonism, with an uncertain mandate and under sharp government funding cutbacks even though the CBC "has long been the most significant single source not merely of Canadian programming but of Canadian culture in this country," the report says.

Expressing its "high regard for the CBC," the task force contends the CBC "has built one of the finest radio services in the world and has mounted a television service that competes directly with the most prodigious, influential and heavily financed entertainment industry ever created."

Canadian content

The task force stresses the CBC should continue to play the central role in Canadian broadcasting. "For us the CBC is not a complementary broadcasting agency; it is the central one. It must be the main Canadian presence on television. The role of the private system is to complement the CBC in the area of quality Canadian programming and to supplement it by providing American programming."

The task force stresses that more money alone won't do. The CBC also needs a clearer mandate and a better process for matching its mandate with its resources.

This year the CBC has a $1.1 billion budget, with $848 million coming from Parliament and almost all the remainder from ads on English- and French-language television.

The task force recommends that the CBC's mandate continue to stress that its services be predominantly Canadian in content and character and that it should offer a balance from the whole range of Canadian programming. It should not be expected to provide foreign programming that is readily available from other Canadian broadcasters, but should offer "the best of foreign programming not otherwise accessible to Canadians."

The task force also urges that the CBC's radio and TV networks should be made available to as many Canadians as possible. Among other things this would mean extending CBC radio coverage in stereo to all Canadian communities of 5,000 or more at a cost of $37 million and ensuring that privately-owned CBC-TV affiliates carry all CBC network programming.

But the task force's main concern is increased Canadian programming on CBC-TV, including peak viewing hours between 7 p.m. and 11 p.m.

The task force generally supports the CBC goal of removing the remaining 5½ hours of mainstream American shows from its prime-time weekly schedule by next September.

The task force estimates the net replacement cost of five full hours of American programs with Canadian ones would be at least $20 million. As well, the CBC would lose $30 million in prime time ads as it dropped American programs.

The task force wants the CBC to play a major additional role through the introduction of a Canada-wide all-news channel in English and a partial channel in French.

The news channel would have no commercials. Its $20-$35 million annual costs should be covered by a monthly cable-TV subscriber charge of 25 cents, the task force says.

On financing, it says, there are no more savings to be had from the CBC, which has already cut $32 million from regional broadcasting in the last two years.

Instead, a new system of financing is needed, the task force argues. At present Parliament provides the CBC with funding while the CRTC sets out the detailed conditions for the CBC's five-year licence. But the two activities are separate: when the CBC appears before the CRTC with its five-year plan, it has no idea what level of funding it will get from the government.

This must change, the task force says. "Prior to the filing of the CBC's application for its licence renewal, the government should indicate what level of financing it intends to provide to the corporation for its next five-year period.

To financially assist the CBC, the House of Commons should pay the CBC the costs of producing and distributing the Parliamentary Television Network — just over $4 million a year. And the Department of External Affairs should fund the $16 million annual cost of Radio Canada International, the task force says.

The task force is also dismayed by "the contentious atmosphere" surrounding labor relations at the CBC. The CBC has about 11,000 staff employees and draws on a pool of about 30,000 contract employees and freelancers.

TORONTO STAR Editorial

Toronto THE TORONTO STAR in English 23 Sep 86 p A20

[Editorial]

[Text] The report of the Caplan-Sauvageau task force on broadcasting — all 700 pages of it — provides a welcome counterweight to the growing trend toward the Americanization of our television. Its description of the crisis situation in which Canadian TV finds itself should prompt the federal government to action. Not to act would be an abdication of duty.

The task force, co-chaired by former New Democratic party official Gerald Caplan and Laval University communications professor Florian Sauvageau, blames a succession of penny-pinching governments — not just the current one, which appointed the task force — as well as broadcast regulators and private broadcasters for the lamentable state of affairs. One example from the task force report tells it all: An astounding 98 per cent of our television drama comes from foreign (mostly American) sources.

Caplan-Sauvageau prescribes large cash injections — about $270 million a year — to boost Canadian fare both on the CBC and on privately owned networks. The money would be raised mostly through new or higher taxes on video-cassettes, VCRs, and cable TV fees. While we wonder about the wisdom of earmarking taxes for specific purposes, we agree that more money is needed.

The task force also recommends significantly tougher Canadian content rules for the networks — 95 per cent for the

CBC in prime time (7 p.m. to 11 p.m.) and 45 per cent for the others. (The current levels are 80 per cent and 37.5 per cent, respectively.) These new targets seem reasonable. But, if applied, they must be accompanied by more money. It costs more to produce Canadian programs than it does to buy American products off the shelf. Ottawa ought to recognize this fact of television life.

In recent years, the government has relentlessly squeezed the CBC budget. The Canadian Radio-television and Telecommunications Commission (CRTC), taking its deregulatory cue from the government, has, in turn, loosened its reins. (In its proposed new rules for television, the CRTC is trying to apply the dubious "less-is-more" proposition that, if private TV stations are allowed to produce fewer Canadian shows, quality will somehow improve.) It is this vicious circle Caplan-Sauvageau seeks to reverse.

We don't endorse all the task force's recommendations. We are skeptical, for example, about its proposal for a new channel — "TV Canada" — to be operated by a hybrid corporation made up of the CBC, provincial broadcasters like TVOntario, and the National Film Board. We already have one public broadcaster with a proven track record — the CBC. If there is more to be done, let's use it as the vehicle rather than create some new body.

But on the whole the task force report is welcome reading. Unfortunately, it has been delivered seven months behind schedule and is now in danger of being overtaken by events in Ottawa. Four TV networks (the CBC, CTV, TVOntario and Global) are about to seek licence renewals from the CRTC. With broadcast issues in a flux, it probably would be best for all concerned if the CRTC were to grant the networks interim renewals until the government, and Parliament, decide on a new broadcast policy.

Canadian television does not have to be bad. As just one case in point, the CBC production of *Anne of Green Gables* won an Emmy award Sunday night for the best children's program. (It was shown on PBS in the United States). But, bombarded as we are by American airwaves, we are in a unique situation. Special funding and rules are required to nurture Canadian television. The alternative — to abandon the field entirely to the U.S. networks — is unthinkable for a sovereign country.

GLOBE AND MAIL Editorial

Toronto THE GLOBE AND MAIL in English 24 Sep 86 p A6

[Editorial]

[Text]

It is a pleasure to read a discussion about Canadian culture that avoids melodrama and exhibits a strong sense of context. Such is the report of the Caplan-Sauvageau Task Force on Broadcasting Policy, released this week in Ottawa.

"How Canadian do we wish our broadcasting system to be? As Canadian as possible — under the circumstances." Circumstances include the status quo, and this task force does not straggle off into airy proposals to revolutionize the CBC (though that exercise has had its uses). Circumstances include the yawning disparity between Canadian and foreign content on television, handled here with a sensitive hand. And circumstances include money, for which this task force shows refreshing respect.

Canada's broadcast system is not in "crisis." Cutbacks to the CBC have been balanced by the new federal Broadcast Fund, which provides $70-million annually as seed money for Canadian television programming. Ottawa is creating additional routes for public support of broadcasting, joined by some provinces. The task force encourages this trend to diversification — along with a recommitment to the Canadian Broadcasting Corporation.

It is time to bring the CBC in from the cold. Canadians have indulged their suspicions of separatism, socialism, centralism and waste in the CBC to the point of damaging the national interest. The task force does the great service of concentrating on the practical need to complete the Canadianization of the CBC's television schedule (which is already 75-per-cent Canadian between 7 p.m. and 11 p.m.). This is a logical consequence of Canada's existence as a nation — a broadcast system that includes a strong Canadian presence, including drama and comedy. The task force does not see the CBC as sole carrier of this mission — a blessed escape from one-track thinking about public broadcasting — but it firmly supports the CBC's role at the heart.

This means more money — about $100-million a year in addition to the CBC's present $848-million grant. It must come from Ottawa's general revenue, which adds to the urgency of sensible reform in other programs to allow for emerging priorities such as this.

Equally important is the task force's proposal for two new public television networks to complement the CBC. One would be news and public affairs. The other — operating under a different authority — would feature children's programming, repeats of the best Canadian TV productions, regional material, documentaries, films and performing arts. Neither new channel would engage in major production itself, each serving primarily as impresario and distributor on basic cable. The task force suggests they be financed by taxes of about $2 a month on cable subscribers — $1 for each new channel. (The task force opts for new cable taxes instead of special fees on private broadcasters, so the latter can increase their own Canadian programming — to which we turn tomorrow.)

There is a life to every issue, and public broadcasting in Canada has come to its maturity. It is time to cut through our aging debate about structures, wishes and intent and make some commitments to action. By shifting a few priorities within the federal budget, we can bring the CBC to its historic potential. By adding a modest tax on cable, we can greatly expand the access of Canadians to each other through this age's primary medium of communication — television.

We know that, as a small nation beside an enormous one, Canadians must act collectively to ensure that we hear our own voices in the crowd. This task force provides some good advice on how to turn up the volume.

/9317
CSO: 5520/103

CANADA

CRTC CHIEF COMMENTS ON BROADCASTING TASK FORCE REPORT

Toronto THE TORONTO STAR in English 30 Sep 86 p F1

[Article by Sid Adilman]

[Text] The head of the federal broadcast regulating body yesterday took the high ground in his first public reaction to the broadcasting task force that sharply criticized regulators for being too soft on private TV operators.

Andre Bureau, chairman of the Canadian Radio-television and Telecommunications Commission (CRTC), noted that TV broadcasters, such as CTV and Global, had been served notice in the CRTC's annual report released in June that more and better Canadian-content programs would be expected of them.

He spoke at a one-day Financial Post broadcasting conference in the Westin Hotel that was packed with broadcasters, advertising agency personnel and others connected with the industry.

The annual report, he said, stated that Canada's current TV season "will be landmark years in the development of Canadian programs" because of government incentives like Telefilm Canada's Broadcast Fund and regulatory guidelines.

He generally "commended" the seven-member task force for avoiding "pie-in-the sky proposals" and for showing "that they were occupied by fairness, not eye-catching headlines."

But Bureau's muted anger flashed briefly when he joked that **Gerald Caplan**, the task force's co-chairman, "has refused to succeed me and test if the report's 180 recommendations could be successfully implemented in the real world." The remark brought a loud gasp from the audience.

Caplan, who was present, later privately (and jokingly) responded that he hadn't been asked to succeed Bureau. Caplan now works for a private Ottawa consulting company.

The task force report recommended that private TV broadcasters air 45 per cent Canadian content in extended prime-time hours from 6 p.m. to 11 p.m.

Bureau sided with those who have argued for years that more money be spent on Canadian programs, not more prime-time hours devoted to them. "Fundamentally, the problem is that we have to put more money in Canadian programs to make them more attractive."

But he agreed with the report that the CRTC does not enforce its guidelines stiffly enough. "We have no money. Our budget is $25 million (raised chiefly from licence fees charged broadcasters) and we have reduced staff the last few years."

He also called "extremely dangerous" a recommendation in the report that the federal cabinet should have the right, as is planned, to issue specific policy directives to the CRTC.

"If the CRTC were subject to government directives you wouldn't have the arm's-length relationship that now exists. They just should abolish the CRTC."

But if the government sets up "broad policy guidelines, that would be okay with me. Where do you draw the line?" Specific directives, he argued, would "probably be a political nightmare for the communications minister."

Bureau said the CRTC has begun a study of the task force report and hoped that the 57 research studies it commissioned would be available to CRTC staff and said the CRTC would have a more detailed public response after the analysis is completed.

CHUM Ltd. vice-president **Fred Sherratt**, who appeared on the same panel, also generally praised the report. But Sherratt said none of the task force's 57 research studies asked Canadians if they were satisfied with existing TV services and programming, or if they agree that government should intervene more. And he said federal politicians are responsible for insisting that viewers across Canada get almost the full range of American programming.

"We are told the system is too Canadian. Why does it appear American? Because those elected to represent Canadians in Ottawa have, for the past decade and a half, taken the attitude that all Canadians should have the right to see, not only all Canadian television, but all American television as well."

Despite that, he noted, "Canadian stations have continued to attract a lion's share of audience" because the stations also include Canadian productions.

Bill Armstrong, CBC's executive vice-president, spoke on the same panel and backed the report, as did his boss, **Pierre Juneau**, last week.

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CSO: 5520/105

CANADA

'FIBRESAT 86' INTERNATIONAL CONFERENCE HELD IN VANCOUVER

Toronto THE GLOBE AND MAIL in English 20 Sep 86 p B5

[Article by Sunny Lewis]

[Text]

Long-distance telephone calls for 10 cents a minute may arrive in the 1990s, telecommunications experts say.

They were speaking at Fibresat 86, an international conference held as part of the recent communications week at Expo 86. It drew 300 satellite and fibre-optic engineers and executives from six continents to Vancouver.

They predicted that, in the next decade, satellite and optical-fibre technologies will compete with — and complement — each other.

In the United States, 700,000 miles of conventional telephone cable has been replaced with fibre. Satellites will lose business as existing trans-oceanic submarine cables are updated with fibre optics. But, as Chris Simpson of American Satellite Corp. put it: "If you can fill the cable up, great. If not, why bother?" Laying the cables is a costly and time-consuming operation, he said.

Satellites, while expensive to launch, permit flexibility, allowing almost instant networks that can be reconfigured to meet changing customer requirements. Fibre optics cannot compete for voice and data services over lightly used routes, or private networks. The technology is also uncompetitive for "point-to-multipoint" services that distribute radio, television or cable TV.

Satellites are ideal for on-the-spot news gathering. They also shine in providing links to remote locations with low volumes of traffic, such as the Far North, small towns in Brazil and islands in the Pacific.

The number of corporate satellite networks has doubled between 1985 and the first half of 1986, said Fred Dassler, executive director of the International Association of Satellite Users and Suppliers. These networks have between 200 and 500 earth station sites.

Richard Jestin, director for Anik Systems for Telesat Canada predicts that, by 1993, the number of small earth stations in U.S. private networks will surpass 250,000.

This proliferation of private systems is prompted by the recent emergence of "very small-aperture terminal" technology.

VSAT uses a tiny portion of the spectrum of second-generation, K-band satellites, such as the Anik C series, to transmit data to small earth stations, the higher frequency permitting the use of smaller dishes, 1.2 to 1.8 metres in diameter. They can be installed on most rooftops without special reinforcement. (Telesat Canada plans VSAT service in four to six months.)

The intriguing prospect of a 10-cent-a-minute long distance call will be a reality when the technology is perfected to allow switching of circuits and single phone calls from one orbiting satellite to another.

The space switches must be accompanied by laser transceivers and spot beams that can hop or scan from point to point on earth as required. Robert Lovell, director of communications for the U.S. National Aeronautics and Space Administration, predicted the first flying switch will be in orbit in the early 1990s.

A race is on, which includes NASA, the European Space Agency and two Japanese satellite developers, to fly the first switch. Mr. Lovell said NASA has invested $75-million (U.S.) and is one year away from building the flight hardware. The agency plans to test-fly the technology on its Advanced Communications Technology Satellite.

Satellite service for mobile ground units such as trucks, trains, ships, even aircraft, is seen as an area of rapid expansion. This year, for example, live broadcast television and access to shoreside credit were introduced for cruise-ship passengers. Maritime and oil rig workers will soon enjoy the same amenities.

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CSO: 5520/104

CANADA

STUDY ANALYZES THREAT OF TELEPHONE NETWORK BYPASS

Toronto THE GLOBE AND MAIL in English 19 Sep 86 p B5

[Article by Lawrence Surtees]

[Text] Bypass of telephone company networks is not the threat it has been held up to be by monopolists and politicians, says a consultant's study commissioned by the federal and provincial governments.

Canadian telephone subscribers do not have a significant propensity to bypass domestic telephone company networks by using cheaper U.S. services, concludes the report's authors at D. A. Ford and Associates Ltd. in Ottawa.

And, contrary to statements made by previous federal communications ministers, the study found that the economic cost of the bypass threat is negligible.

That key finding challenges the main argument used by telephone companies and politicians in denying competition to monopoly telephone company services. Although the report was released to the governments several months ago, it was not made public until earlier this month by the federal Department of Communications.

The report's main finding also challenges popular views and worries expressed by consumer groups, unions, the 10 largest telephone companies and the federal telecommunications regulatory agency.

By using non-conventional ways of routing long-distance telephone calls through carriers in the United States or private networks, customers can save money on their calls. But the prospect of extensive bypass has been of increasing worry to the domestic telephone companies because of the growth of competition in the United States and a proliferation of alternative means of routing calls.

Based on research conducted between January and March, the study estimates that bypass cost the domestic telephone companies $4.6-million in 1985, compared with total telephone company revenue of more than $9-billion in the same period.

The study also found that only $1.5-million of the revenue loss came from telephone use. The remaining $3.1-million was the result of bypass by Telex subscribers using discount message services and carriers based in the United States.

Because of the many ways to bypass the telephone system, the authors of the report said they tried to give the term as wide a meaning as possible.

The finding contradicts the prevalent argument that bypass poses a significant threat to the monopoly telephone carriers.

The study also found that businesses and residential consumers are paying substantially higher telephone rates than their counterparts in the United States.

As recently as last February, then federal communications minister Marcel Masse said in Montreal that lower long-distance rates in the

United States are tempting many domestic companies to bypass the telephone companies. In June, 1985, he said the impact of increased bypass would "allow our system to gradually deteriorate" or force telephone rate increases.

Both the federal Government and the telephone companies have used these arguments to deny competition or to tread cautiously in making policy changes.

But the D. A. Ford study argues that "benefits would accrue to most sectors of the economy and all regions of the country" if telephone rates for Canadian businesses were reduced to comparable levels charged in the United States.

On average, telecommunication costs to business users are about 13 per cent lower in the United States. But the study found wide differentials in the rates for a number of services: long-distance rates are 37 per cent lower in the United States; private lines rented for voice service are 49 per cent lower; and dedicated computer data lines are 52 per cent less.

A company in British Columbia that attempted to make a business out of routing subscriber calls through the United States recently closed its doors as a result of action by the Canadian Radio-Television and Telecommunications Commission. The study argues against the current high costs and prohibitions that keep Canadians away from alternative carriers and protect domestic carriers.

Economic modelling led the authors to conclude that reductions in telecommunication rates would have a more favorable impact on the economy than comparable reductions in personal income taxes.

The investigation was one of several studies commissioned by the federal and provincial communications ministers last year that will be used to shape a national telecommunications policy.

Ottawa began a telecommunications policy review more than five years ago under prime minister Pierre Trudeau. The current Government led by Prime Minister Brian Mulroney ordered the review to be conducted in co-operation with the provinces.

The long-awaited review is expected to give much needed policy direction to regulatory bodies on competition and on telecommunication rates. In August, 1985, the CRTC rejected an application from CNCP Telecommunications of Toronto asking for long-distance competition. And the two largest telephone companies are putting pressure on Ottawa to allow "rate rebalancing" that would lower long-distance rates but increase local rates.

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CSO: 5520/104

CANADA

TELECOMMUNICATIONS FIRMS COOL TO FREE TRADE

Toronto THE GLOBE AND MAIL in English 10 Sep 86 p B2

[Article by Lawrence Surtees]

[Text] Suppliers of telecommunications services on both sides of the Canada-U.S. border may benefit from lower equipment prices if negotiators at the free-trade talks agree to eliminate tariffs on those goods.

But domestic telephone users will not get reductions in their bills because regulatory differences in both countries preclude free trade in telecommunications services.

That is the consensus of a panel of two industry representatives and a telecommunications lawyer who will be discussing free trade tomorrow at the annual convention of the Canadian Business Telecommunications Alliance. Their views help to explain the lack of support for sectoral free-trade initiatives among some key domestic industry players.

The North American telecommunications equipment industry had total revenue of more than $22-billion in 1984. Partly because of higher tariffs and a well-established industry, Canada enjoyed a trade surplus of $185-million that year. The average Canadian tariff rate on telecommunications equipment made in the United States is 17.8 per cent, while the average U.S. rate is 7 per cent.

Although the Canadian surplus is a small proportion of total bilateral trade in the sector, both it and Canada's higher tariffs "have served to promote heightened protectionist sentiment in the United States," said Donald Morrison, vice-president of marketing and planning at AT&T Canada Inc. of Toronto.

The position of American Telephone & Telegraph Co. of New York is shaped in part by a desire to remove obstacles to greater market penetration. AT&T would prefer a comprehensive agreement on liberalizing all bilateral trade because sectoral free-trade talks suffer from a "lack of scope."

Laurence Dunbar, a lawyer with the Ottawa legal firm Johnston & Buchan, concludes that a reduction or removal of tariffs would benefit equipment buyers and result in increased competition. But he cites a study done by a group of business students at Hamilton's McMaster University in April that says the effects on the industry would be minimal.

Two of Canada's largest telecommunications equipment makers have already penetrated the U.S. market to a high degree and manufacture their products there. A third is precluded from selling its goods in the United States by its U.S. parent.

Northern Telecom Ltd. of Mississauga, Ont., has circumvented existing barriers by locating many of its factories in the United States, a market that accounted for more than 60 per cent of its total revenue in 1985.

A vocal opponent of protectionist measures, Northern Telecom chairman Edmund Fitzgerald is also opposed to sectoral free trade.

"We do not support reciprocity on a sectoral product-by-product or country-by-country basis," Mr. Fitzgerald said last year. "Sectoral trade agreements . . . simply contribute yet another form of trade barrier to the international environment."

Mitel Corp. of Kanata, Ont., is also significantly insulated because of its manufacturing plants located in the United States. The U.S. market accounted for 42 per cent of its sales in fiscal 1985. Microtel Ltd., a subsidiary of British Columbia Telephone Co. Ltd. of Burnaby, B.C., is precluded from selling its wares in the United States because of an agreement between B.C. Tel and its U.S. parent, General Telephone and Electric Corp.

But the high degree of integration between North American telephone companies and related manufacturing arms constitutes a significant non-tariff barrier to free trade, Mr. Dunbar wrote in a paper written for the CBTA convention.

"A Canada-U.S. trade agreement would have to alter the purchasing and procurement policies of the major telephone companies in both countries before it could result in anything approaching free trade in the North American telecommunications equipment industry."

The third panel member, Gordon Lucas, vice-president of National Advanced Systems, forecasts the tariff reduction could lower domestic equipment costs by 10 to 15 per cent.

But the impact on telecommunication services provided by telephone companies is expected to be negligible because it will "depend on the degree of liberalization of the regulations governing communications services," Mr. Lucas writes in his prepared text.

The numerous regulatory differences between Canada and the United States constitute major non-tariff barriers to free trade in telecommunications services. For example, long-distance competition is illegal in Canada, precluding users from choosing other carriers.

However, the United States is anxious to include these and other services in any free-trade agreement with Canada because it would provide a precedent for a future multilateral agreement, Mr. Dunbar said.

Such an agreement would break new ground because there are currently no provisions in the international General Agreement on Tariffs and Trade dealing with traded services. The issue will be discussed by GATT ministers at a meeting beginning Monday, but it is still unclear whether services will be included in the next trade round.

Several giant business interests in the United States, particularly in the computer and financial industries, are pressing U.S. negotiators to demand regulatory changes from Ottawa. And, Mr. Lucas writes, the United States can be expected to use its negotiating leverage to make demands of our regulatory system.

Just as domestic regulations prevent International Business Machines Corp. or Citibank from setting up substantial networks in Canada in competition with the telephone companies, U.S. law acts as a barrier to Canadian companies from grabbing a piece of the much larger long-distance market in the United States. That market was worth more than $40-billion last year, compared to about $5-billion in Canada.

Bell Canada, the largest domestic telephone company and utility arm of Montreal-based Bell Canada Enterprises Inc., favors sectoral free trade.

But its support is conditional on Washington removing the foreign ownership restriction and Ottawa allowing Bell to rebalance its rates. Free trade in telecommunications services would result in competition and Bell's long-standing policy response is to be able to reduce long-distance rates and raise local rates.

Before Canada's negotiators, led by Simon Reisman, can even consent to discussing free trade in telecommunications services, the federal Government will have to determine its new telecommunications policy, an exercise that has been delayed for more than five years.

As far as trade in goods, sources in Ottawa indicate that Mr. Reisman's team is circumventing the policy vacuum at the federal Department of Communications by getting advice and briefings from the Department of Regional Industrial Expansion. Officials at DRIE tend to be more favorable to competition, which may bode well for equipment buyers.

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CSO: 5520/104

CANADA

VANCOUVER UHF EMERGENCY RADIO SYSTEM IN OPERATION

Vancouver THE SUN in English 23 Sep 86 p D4

[Article by Peter Trask]

[Text] No news is good news to Vancouver emergency planner Mel Blaney and his counterparts in the 13 municipalities of the Greater Vancouver regional district.

But if some disaster — such as an earthquake or a massive flood — does occur, they can now find out fast even if all telephone and electrical services are knocked out of action.

A new $150,000 emergency radio communications system designed to assist fire, police, health and welfare agencies in the event of a major emergency went into operation today tuesday.

Mayors of the 13 municipalities gathered at the GVRD offices on Kingsway to broadcast a test message to the emergency operations centre in each of the cities and districts involved in the program.

"It means that from now on the people in charge of coping with an emergency can easily communicate with other, even if some or all telephone services are no longer operating," said Blaney.

Up to now, he said, a Vancouver fire chief attending a major blaze near the Burnaby boundary was unable to communicate directly by radio with his Burnaby counterpart.

"They had to rely on telephones to communicate because their radios operated on different frequencies," said Blaney.

The UHF system consists of 16 base stations and 24 portables distributed throughout the Lower Mainland and linked by radio to a central transmitter.

The cost of the program was shared by Ottawa and the member municipalities of the GVRD.

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CSO: 5520/1

CANADA

NEW TELECOMMUNICATIONS TRAINING INSTITUTE PLANNED

Ottawa THE CITIZEN in English 9 Sep 86 p B3

[Text]

MONTREAL (CP) — The federal government and six telecommunications companies, cocking an eye towards Third World sales, announced Monday they will jointly fund a training institute for senior telecommunications managers from developing countries.

The Telecommunications Executive Management Institute of Canada will receive half of its $4 million funding over the next five years from the departments of Communications and External Affairs and half from the private sector, said Communications Minister Flora MacDonald.

The six companies involved in funding the institute are Teleglobe Canada, Bell Canada International, Northern Telecom Canada, Ltd., Telecom Canada, Telesat Canada and Microtel Learning Systems.

The institute will also give the government and industry an opportunity to showcase its high-tech hardware to officials from countries who will soon be shopping for equipment.

Jean-Claude Delorme, president of crown-owned Teleglobe Canada and spokesman for the half-dozen telecommunications companies involved, said "The institute will help promote the Canadian telecommunications industry around the world."

Sir Donald Maitland, head of the Independent Commission for the Development of World-Wide Telecommunications, joined the news conference live via satellite from London.

Maitland said the technological imbalance between the west and developing countries was "unacceptable," and "the centre will meet the problem of lack of trained personnel.

Delorme said the first six-week training session for 20 managers will be held next year at various business, research and academic institutions in the Montreal area. Graduates will receive a degree from a Canadian university.

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CSO: 5520/104

CANADA

BRIEFS

MICROTEL SATELLITE LINK DEVICE--Microtel Ltd says it has generated a new product from some existing technology that it hopes will help it to meet the satellite-communications needs of cross-country organizations. "Major corporations, government agencies and communications carriers will be able to use the new product to connect data terminals such as personal computers, automated teller machines and point-of-sale terminals with host computers via satellite," said Microtel, a B.C. Tel subsidiary. The new product, known as a VSAT (very small aperture terminal), is a new version of Microtel's Spacetel satellite communications system. Microtel introduced its first communications satellite in 1983. [Text] [Vancouver THE SUN in English 11 Sep 86 p C10] /9317

CSO: 5520/105

ROMANIA

INTERNATIONAL TELECOMMUNICATIONS SEMINAR HELD

Bucharest REVISTA TRANSPORTURILOR SI TELECOMUNICATIIILOR in Romanian Vol 13 No 3 86 pp 41-44

[Report by Valeria Bara of the Research and Design Institute for Telecommunications on the international seminar on "The Technical and Operational Aspects of Centralized Maintenance" held in Bucharest in April 1985 under the aegis of the International Telecommunications Union]

[Text] An international workshop-type seminar on "The Technical and Operational Aspects of Centralized Maintenance" was held in Bucharest between 18 and 26 April 1985.

The seminar was one of the events held by the International Telecommunications Union [ITU] within the framework of the European regional program for developing international telecommunications, and was organized by the Bucharest Research and Design Institute for Telecommunications (ICPTTc) in cooperation with ITU.

The telecommunications administrations of the People's Republic of Bulgaria, CSSR, Greece, SFRY, Malta, the Socialist Republic of Romania, Portugal, Turkey, and the People's Republic of Hungary, which belong to the above regional program, were represented by delegates who attended the workshop classes.

The seminar was also attended by prestigious lecturers sent by the telecommunications administrations of France, the FRG, Greece, Great Britain, the Netherlands, Portugal, Sweden, and the Socialist Republic of Romania.

The proceedings were chaired by Dr Eng Sofronie Stefanescu, deputy scientific director of the ICPTTc and national coordinator of the European regional program. As chairman of the seminar he was assisted by ITU expert Mr Hogendijk.

Note that the Bucharest seminar was preceded by two other similar seminars held in Athens and Sofia, which dealt with traffic engineering and telecommunications netework planning.

The lecturers presented 26 reports grouped in five working sessions entitled:

1. Maintenance Supervision and Monitoring Possibilities;

2. Maintenance Coordination Centers;

3. Operational and Maintenance Management Organization;

4. Types of Services and Operation Quality;

5. Computer Utilization.

Aside from the reports presented at the working sessions the lecturers representing the telecommunications administrations of Sweden, the Netherlands, and Malta assigned the workshop attendants the following case study to solve: The Telecommunications Administration of the Country TELELAND. For this study the workshop attendants had to provide technical, economic, geographical, and personnel solutions for organizing the maintenance of the telecommunications network on an imaginary territory with varied gepgraphical, material, and technical conditions.

The solutions devised by the workshop participants, grouped in three working groups for the purpose of the case study, and the solution proposed by the authors were presented at the final proceedings of the seminar.

The main aspects analyzed by each lecturer in his paper (document) were then reviewed.

Document No 1: "Monitoring and Gauging Subscriber Lines," by T.G. Avgeris, Greece.

The author presented the achievements of the Greek Administration in the area of monitoring and automatically gauging subscriber lines. He described the operation of a hierarchical monitoring network made up of: remote units containing the interface with the subscriber line; monitoring control centers to which the remote units and the departamental center are connected and which monitor the operation of all the control centers belonging to it. One departamental center serves one of the areas into which the national network of subscribers is divided.

This system permits to automatically gauge the following functions of the subscriber line: direct current, alternate current, capacity, and insulation resistance. It can also determine the loop resistance of the line, the speed of the telephone dial, the frequency of the dial tone and of other tones, and so forth.

Document No 2: "The System Utilized to Gauge Subscriber Lines (MESCIA)," by B. Prince, France. The document presented an electronic variant of the testing bench used by electromechanical telephone exchanges and a device for gauging subscriber lines connected to electronic telephone exchanges. These devices are connected to a main operation center which can issue orders on telegauging subscriber lines for: determining the value of the direct and/or alternate tension existing between one of the line wires and the soil; evaluating the loop and insulation resistance; determining line integrity; measuring the electrical parameters of the telephone dial, and so forth.

Document No 3: "Utilizing the Monitoring Systems of Telephone Exchanges to Test Their Operational Quality," by B.W. Bos, Netherlands.

The author reviewed the methods used for testing the operational quality of the three types of telephone exchanges existing in the Dutch telecommunications network: electromechanical exchanges, analogue exchanges controled by taped programs (SPC), and digital exchanges. He also presented various algorisms for improving the preventive and corrective measures taken in the maintenance of automatic telephone exchanges.

Document No 4: "Monitoring Urban and Trunk Line Junctions; Traffic Gauging," by T.G. Avgeris, Greece. The author presented a centralized system for monitoring urban and trunk line junctions and for gauging traffic according to directions at electromechanical telephone exchanges. The system is made up of microprocessor terminals connected at telephone exchanges, and a central microcomputer to which the terminals are connected. The following functions are recorded for each circuit (junction) monitored: number of calls and total busy time. The average busy time is calculated with the aid of these data, and the value obtained is compared with certain preestablished thresholds, thus obtaining a clear prognosis for the operation of each circuit monitored. The same data is also utilized for traffic processing.

Documents No 5 and 6: "Equipment for Testing the Transmission Characteristics of the Telephone Exchange," by F. Lagarto, Portugal, and "Monitoring Transmission Circuits," by B. Vaslin, France.

The first document dealt with a system designed for the automatic and centralized gauging of the transmission characteristics of the trunk network, in accordance with recommendations M.610 and M.620 of the CCITT. The system furnishes information on: attenuation, distorsion, linearity, behavior of the transmission channel at various signal frequencies and entrance levels, and so forth.

The second document presented two types of equipment used for: gauging the transmission quality at various levels of selection of the electromechanical exchanges, and respectively determining the qualitative and quantitative indicators of telephone calls (the time required to establish a telephone connection, the direct and alternate current signaling accompanying the establishment of a telephone connection, the quality of the connection, etc.).

Document No 7: "Statistical Control and Monitoring of Maintenance Activities," by T.C. Avgeris, Greece. The author examined the statistical behavior of the functional parameters of the telephone communication equipment with a view to providing the telecommunications administrations with a practical tool for planning the budget and personnel involved in maintenance activities.

Document No 8: "The Alarm Retransmission System and the Monitoring of an Automatic Telephone Exchange," by B. Vaslin, France. The author presented the organization of maintenance activities at French telephone exchanges, where the hierarchical structure established is based on local, regional, and departamental coordination centers. The various types of alarms specific of telephone exchanges are also monitored on the basis of the same structure.

Documents No 9 and 10: "Monitoring the International Network," by E. Ericson, Sweden, and "Monitoring the Trunk Network," by B. Prince, France.

The first document reviewed the CCITT recommendations concerning the maintenance of the international network and referred to the manner in which this activity is organized in Sweden.

The second document presented the organization of the French trunk exchange and the methods used to monitor its operation. It also described the equipment used to centrally monitor the French trunk network. Information concerning the following points is collected from the trunk exchanges with the aid of terminal equipment: the operation of the junction control unit, direction traffic, etc.

The information gathered is dispatched to a monitoring center for processing, and the results are then communicated.

Documents No 11, 12, 13, 14, presented by N. Stavroulakis (Greece), N. Anderson (Sweden), R. Maltha (Netherlands), and W. Maurer (FRG) dealt with aspects of the optimal organization of a center to monitor the commutation systems of the telephone network. These documents featured the basic theoretical information required to solve the case study resolved dat the seminar. The authors presented the concept and achievements of the telecommunication administrations of their respective countries in the area of organizing and furnishing equipment and personnel for monitoring centers.

Document No 15: "The Optimal Structure of Centralized Maintenance," by S. Stefanescu, deputy scientific director of ICPTTc.

The author presented the conditions required to ensure centralized maintenance of the telephone systems and network, and the ways to achieve it. He also suggested a model for the organization of activities related to a maintenance center.

He then examined the technical and organizational methods that are to be employed to minimize the time required to repair a breakdown, since this parameter is decisive for the continuous operation of telecommunication networks and equipment.

In order to establish the correlation between the duration of a breakdown and the number of maintenance personnel, the author presented an analogy between the centralized maintenance systems and the waiting systems for servicing the telephone traffic.

Document No 16: "Organizing the Operation and Maintenance of Telephone Exchanges," by W. Maurer, FRG.

The author described the maintenance of electromechanical and SPC exchanges in the FRG. He presented the preventive and corrective actions that serve as the basis of maintenance activities, and examined the basic principles of organization of a centralized maintenance and monitoring of the systems of telephone commutation.

Document No 17: "The Organization and Maintenance of Local Networks; the ALPHA System," by B. Vaslin, France.

The author presented the organization, equipment, and working program of the department in charge of the exploitation and maintenance of the subscriber network within the French Telecommunications Administration. He also presented some of the maintenance devices and systems such as the system for the centralized gauging and monitoring of subscriber lines, the device for local gauging (at telephone exchange level) of subscriber lines, the system for the centralized monitoring of public telephones, the system for the rapid testing of subscriber lines, and the systems used for administrative activities and relations with the public.

The document also presented the ALPHA system of centralized monitoring of public telephones proceeding from the number of taxing pulses [impulsuri de taxare] recorded by them. This number is compared with various thresholds established so as to make it possible to diagnose breakdowns on the monitored public telephones.

Documents No 18-22: presented by T. Urben (Great Britain), B. Prince (France), and B. Bos (Netherlands) dealt with the quality of the services offered by the telecommunications systems. This topic is the subject of a new manual issued by the CCITT entitled Manual on the Quality of Services, Operational Management, and Maintenance of the Telecommunications Network.

Document No 23: " The Transfer of Information Between Remote Data Gathering Units and a Central Control Processor," by E. Psarras, Greece.

The author described the specific technical issues of a system of data collection with the aid of remote equipment provided with microprocessors and connected to a central multimicroprocessor-type processor.

Document No 24: General Considerations on Computer Utilization," by E. Ericsson, Sweden.

The author described the main technical aspects and the important advantages presented by the utilization of personal computers as compared to the old, expensive general central units.

Document No 25: "Computerized Equipment for the Centralized Maintenance of PCM Digital Transmission Systems," by I. Dobre, ICPTTc Bucharest.

The author described the centralized system of monitoring first order PCM systems, utilized for interconnecting electromechanical telephone exchanges. This system makes it possible to monitor the terminal equipment, line segments, and the operational quality of the terminal equipment through traffic measurements performed at no 16 time intervals. He also described the manner in which the system records and pinpoints breakdowns, while performing a chronological analysis of the events monitored.

Document No 16: "X8--A Computerized Maintenance System for Electromechanical Exchanges," by A. Vasilescu, ICPTTc Bucharest.

The author presented the configuration and operation of a system designed to automatically collect binary information from electromechanical telephone exchanges and to record and process them. This system is made up of terminal equipment provided with microprocessors and central equipment provided with a data bank minicomputer, to which the terminal equipments are connected.

The author also presented some of the most important applications of the X8 system: collecting and processing information on breakdowns in the equipment of telephone exchanges, and information furnished by the alarm oversight and monitoring panel.

After the presentation of the lecturers' documents the representatives of the telecommunications administrations of the People's Republic of Bulgaria, Turkey, and SFRY reviewed the results achieved in their countries in the area of centralized monitoring and maintenance of the telecommunications network.

The seminar formulated and adopted eight recommendations for the telecommunications administrations of the countries participating in the European regional program for developing international telecommunications. These recommendations highlight the importance of centralized monitoring and maintenance of the telecommunications network and equipment for improving their efficiency and operational quality.

All the participants agreed that the seminar contributed to better understanding the achievements attained in the area of maintenance of telecommunications systems and networks, to the adoption of better directions for the relevant activities, and to promoting ideas of progress and cooperation.

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CSO:5500/3002

BERMUDA

COMPUTER INDUSTRY, APPLICATIONS SET FOR EXPANSION

Promotional Contacts

Hamilton THE ROYAL GAZETTE in English 29 Aug 86 p 5

[Text]

Lawyer Mrs. Linda Milligan-Whyte will be travelling to Ireland next week, as Bermuda's representative at an international computer conference.

Government is helping pay for the trip with a $2,000 donation to the Computer Society of Bermuda, Minister of Intergovernmental Affairs Sen. Charles Collis said.

Sen. Collis said Government was hoping to attract international computer business to the Island, and that attending functions like next week's conference was the first step.

BCS President Mr. Peter Hollings said Mrs. Milligan-Whyte will promote Bermuda as a location for major information processing companies to base subsidiaries.

And she will also be trying to convince the International Federation of Information Processors (IFIP) to hold one of its upcoming conferences here.

Mrs. Milligan-Whyte is on the BSC board and is a contributing editor to an international magazine about laws governing data processing.

Mr. Hollings said Bermuda should be more active in trying to attract computer business. Ireland has, he said, and the industry is now a major component of that country's economy.

"And what has Ireland got that Bermuda doesn't?" Mr. Hollings asked.

Very little infrastructure is needed, said Mr. Hollings. "A handful of people can do great things in developing and marketing software worldwide.

"Not only would it be nice for the usual direct and spin-off benefits, but it would be good to have that capability on the Island. Just to have the leaders here would put Bermuda in the forefront of the computer industry."

Mr. Hollings said that would start a cycle which would eventually "create a human capability" in Bermuda. Now, he said, a large number of senior data processors have to be imported.

Next week's world conference will be IFIP's 10th. Mr. Hollings said 49 countries are listed under the organisation's banner, and that it represents the "highest level of information processing".

New Commercial Grouping

Hamilton THE ROYAL GAZETTE in English 4 Sep 86 p 22

[Text]

Computer sellers held their first meeting yesterday as a newly-recognised group in the Bermuda Chamber of Commerce.

Said chairman Mr. Nicholas Weare: "We were encouraged to meet because of the growth and increased importance of computers in the local community."

Although there are no figures to show the industry's growth, Mr. Weare estimates there are more than $50 million in computer systems on the Island.

There are more than a dozen firms selling computers. Present at yesterday's meeting were the representatives of nine.

Mr. Weare, general manager Business Systems Limited, said the formation of the group was important to enhance communication among businesses with a common interest.

"Now if someone wants to talk about computers they can come to one group instead of having to meet with several individual concerns."

Formed under the Chamber's professional services division, the new section — Computer Systems Vendors — is opened to any business which complies with Chamber guidelines.

Its next meeting is scheduled for the first Wednesday of next month.

Bid for International Conference

Hamilton THE ROYAL GAZETTE in English 11 Sep 86 p 18

[Text]

Bermuda may host an international computer conference within the next six months.

And if the conference goes ahead, Bermuda may end up getting an onslaught of computer businesses.

Lawyer Mrs. Lynda Milligan-Whyte yesterday said Mr. James Finch, chairman of the International Federation for Information Processing's sub-committee on computer security, would be visiting Bermuda in October to look at services the Island has to offer.

If Mr. Finch decides in favour of Bermuda, a conference would be held within the next six months. The conference, which would be put on by IFIP's sub-committee on computer security, would attract 1000 people including computer law specialists, high-tech businessmen and bankers.

"These are the people who are most concerned with computer security," said Mrs. Milligan-Whyte, lawyer for the Bermuda Computer Society.

Mrs. Milligan-Whyte is just back from Dublin, where she attended IFIP's Tenth World Computer Congress. Her trip for the Congress, which is put on every three years, was sponsored by the Bermuda Computer Society and Government.

Mr. Finch's Bermuda visit arises out of the Dublin Congress, where Mrs. Milligan-Whyte suggested Bermuda as a conference site.

The offer, she said, had the backing of Government and the Bermuda Computer Society, with whom Mr. Finch would be meeting while here.

Mrs. Milligan-Whyte left the Congress with two main recommendations:

- Bermuda must become a full member of IFIP, and.
- Government must have a national policy on the computer industry.

"If Bermuda is serious about developing the computer industry, they would have to became a full member and would have to host conferences," she said.

She added: "The need for countries to have a national policy was stressed in most of the seminars. You can't just leave it to private enterprise."

Everyone — Government, businesses and the education system — must be involved in the development of a computer industry.

She pointed to the example of Singapore, which became committed to the development of the computer industry 10 years ago.

"They were computer-illiterate," she said. "Now most of the school children have a working knowledge of computers. Singapore now exports software."

Mrs. Milligan-Whyte, a corporate lawyer for Appleby, Spurling and Kempe, is very enthusiastic about the development of a computer industry here, saying it would be similar to the Island's role in insurance.

United States firms could set up exempt companies that could conduct trade in software to non-US jurisdictions.

Bermuda could also offer escrow arrangements for software agreements.

In an attempt to prepare the community for the onslaught of businesses that be attracted to Bermuda if the conference comes off, The Bermuda Computer Society planned to hold a series of seminars.

The first seminar would be conducted in October by Mr. Finch.

Information Network Plans

Hamilton THE ROYAL GAZETTE in English 18 Sep 86 p 2

[Excerpts]

A communications giant is holding confidential talks with Government on plans to introduce a new service allowing a cut-price link-up between computers in different offices.

Major international insurance companies and local banks are keen to see a cheap new facility which would allow information to be sent to computers around the Island.

Cable and Wireless is now seeking permission from Government to introduce the new service.

But yesterday commerical manager Mr. Cornel Fox was reluctant to discuss the new project.

He said: "The situation is that we are in delicate negotiations with Government at this time and we feel it might be premature to say anything."

Existing link-ups between computers require individual telephone lines but the new service would make use of Cable and Wireless equipment already used to link computers internationally.

/9317
CSO: 5540/007

BERMUDA

BROADCASTING COMPANY EYES PROSPECTS FOR SECOND TV CHANNEL

Hamilton THE ROYAL GAZETTE in English 9 Sep 86 p 1

[Text]

Directors of the Bermuda Broadcasting Company are expected to make a decision within the next 12 month on whether the Island will get a second TV channel.

Sen. James Williams, chairman of the Board of BBC, said the company is investigating the prospects of installing the new equipment in an effort to improve the quality of service with a view to setting up a second channel.

"We are not at a point at which we can talk about costs," said Sen. Williams. "This is an important decision. We are looking at a six figure investement. We hope to know within the next six months exactly where we are headed."

He said it was too early to discuss any details about the second channel, and would not say if it was going to be a network station or a special interest channel.

The company has maintained the slot reserved for Channel 8, despite the fact that a faulty transmitter has rendered it useless.

Senator Williams also accused the Government of interfering with the company'S ability to generate revenue.

The company has fought its way back from the brink of financial disaster and has survived a storm of legal controversey over the past two years.

In the wake of the BBC's announcement of a $561,000 profit, Minister of Community and Cultural Affairs the Hon. Robert Barritt said last week he would seek a better deal from the BBC for the broadcasting of children's programmes.

But Sen. Williams defended the $200,000 broadcast fee charged the government, saying it was well below the normal rate.

"They are only paying half the normal cost for two hours per day, five days a week," Sen. Williams said. "The fact that we made a profit last year is not a good reason for Government to try and make it more difficult for us to carry out our aims and objectives."

He accused Government of playing both ends against the middle, asking for better and more programming on the one hand, while cutting a main source of revenue on the other, specifically cigarette and tobacco ads.

"I have yet to see any irrefutable evidence that the elimination of cigarette advertising on television has reduced smoking," he said.

Sen. Williams said he met yesterday with the Minister of Community and Cultural affairs and has informed him of the company's intentions.

"We are committed to the idea of a second channel," said Sen. Williams. "We would like to be able to offer a choice."

/9317
CSO: 5540/007

COLOMBIA

GOVERNMENT ADMITS INABILITY TO FINANCE SATELLITE

$500 Million Cost Cited

PA112122 Bogota Emisoras Caracol Network in Spanish 1215 GMT 9 Oct 86

[Text] Bogota -- The Government of President Virgilio Barco has admitted that Colombia by itself cannot finance a satellite costing nearly $500 million as would be necessary to enjoy the right to use a geostationary orbit. The country has already signed up for the use of the so-called Andean satellite at a lower cost. Minister of Communications Edmundo Lopez Gomez told the congress that the country must take advantage of this natural resource for the development of telephone and television service and other types of advanced communications.

Endorses EEC Plan For Satellite

PA151819 Bogota EL TIEMPO in Spanish 9 Oct 86 p 6-a

[By EL TIEMPO Reporter Ana R. Luque]

[Excerpts] Colombia has agreed with the EEC recommendation to launch a communications satellite with 24 transponders to be shared by the Andean countries, Communications Minister Edmundo Lopez Gomez announced to the Sixth Senate Commission, adding that Colombia will promote the idea. [passage omitted]

Foreign Minister Julio Londono Pardes said Colombia continues to struggle for the rights of the countries located under the geostationary orbit [as published]. He said their representatives on a United Nations work commission dealing with demarcation of orbits, plan to make a special effort to stop the countries trying to disperse the group.

The communications and foreign affairs ministers were cited by Senator Felix Salcedo Baldion to explain aspects regarding the defense of the segment on the geostationary orbit, including the possibility of launching a Colombian satellite, selling services to other nations, and also renting Intelsat channels. [passage omitted]

Communications Minister Lopez Gomez said it has only recently been learned that Esco, a subsidiary of the EEC, made the recommendation for a feasibility study on an Andean communications satellite.

He explained that four alternatives have been considered, to wit: a satellite of our won with 24 transponders called Condor 1; a satellite of our own with 12 transponders and the subsequent launching of one with 24 transponders called Condor 2; use of the available capacity of Intelsat; or use of such systems at the Brasilsat and Panasat.

According to Esco's study, the most viable project is that of Condor 1, which would cost approximately $480 million. This cost would be similar to that of the Satcol project, which was rejected for economic reasons. The satellite's signal would cover the entire region.

Lopez Gomez said the satellite's cost would be shared by the five Andean countries and this administration will make every effort to make this project a reality. He added these conclusions were reviewed by the members of the Association of Andean Telecommunications Enterprises last week and the Colombian participants will hold a meeting within the next few days. [passage omitted]

/9738
CSO: 5500/2005

COLOMBIA

FIRST DOMESTIC MICROPROCESSOR TERMINAL EXHIBITED

Bogota EL TIEMPO in Spanish 15 Sep 86 p 9-B

[Article by German Ulloa F.]

[Excerpts] Over 60,000 spectators witnessed the size and quality of the Fifth Computer and Office Equipment Fair this year. Most of these visitors, unlike those in past years, were able to enjoy over 1,000 machines exhibited in an orderly manner, thanks to the magnificent organization of this year's fair. This time the exhibitors selected and planned the display, thinking as never before about the potential users and the needs of the national market, and about the fair's duration, which this year was cut from the 8 days it had lasted in the past to 6 days. So for the first time the young people hired to man the stands did not end up exhausted and irritable, as we found on Saturday afternoon as we were taking photos and collecting final impressions from the exhibitors, visitors and members of the organizing groups.

New Products, a Matter of Faith in the Nation

The growing reactivation of imports and the optimistic atmosphere surrounding the new administration were to a large part responsible for the positive climate which has prevailed in the CORFERIAS facilities. This made it possible to exhibit a group of machines and programs of the highest and most recent technology.

Carvajal demonstrated its confidence in the nation with the introduction of the first microprocessor terminal for industrial data made in Colombia. This microprocessor is the result of dedicated work begun by electronics engineers in a new division, which for 8 months has been designing and producing high-quality and highly competitive exportable products. Many other products will be following this microprocessor in the near future. Also, Delectronica marked its entry in the educational and medical market with some interfaces which enable a user at any computer to monitor and analyze signals from instruments such as cardiographs and physics labs, areas in which our technology has not been very active in the past.

Experts like the Mexican Adolfo Guzman, a member of MCC, Alberto Garcia from Micromega, Ltd, Bernard Michaud, an educational computer specialist from Quebec, the Puerto Rican hardware designer Fernando Colon from Digital, and Siegfried Zopf, a developer from Siemens, made the conferences memorable and productive events. "Each one seemed to get better and better," some persons attending reported.

A New Generation of Colombians

A foreign exhibitor summarized the new situation for us in this way: "Colombian executives and businessmen seem to be more experienced now. On this occasion their interests have included the software available and the ways in which packages and equipment can be used to solve their problems and serve as tools for their projects. This demonstrates that Colombian businesses have matured in their use of systems."

Thanks to the varied exhibit of equipment, some with prices under 100,000 pesos, and the wide range of programs, especially the software available for engineers, architects and teachers, the exhibit responded to almost all the interests of the public. Most of the persons attending stated without hesitation that they plan to attend the next computer fair. This suggests the large attendance we can expect next year.

7679
CSO: 5500/2004

ST VINCENT AND THE GRENADINES

BRIEFS

TV TASK FORCE PROBE--Kingstown, St Vincent, Sept 19, CANA--A government-appointed 12-member task force set up to look into television broadcasting in St Vincent and the Grenadines has started its work. The committee was appointed by the Ministry of Information following concerns raised about the effects on the society and especially children, of U.S. television programmes reaching St Vincent and the Grenadines via satellite. Vicentian, Millicent Iton, UNICEF (United Nations Childrens Fund) advisor to the Ministry of Education, heads the task force, whose members are drawn from the teaching profession, the media, the Chamber of Industry and Commerce, and women's and youth organisations. A spokesman for the group said individuals and organisations have been invited to submit memoranda on the entire question of TV broadcasting by October 31. [Text] [Kingston THE DAILY GLEANER in English 20 Sep 86 p 11] /9317

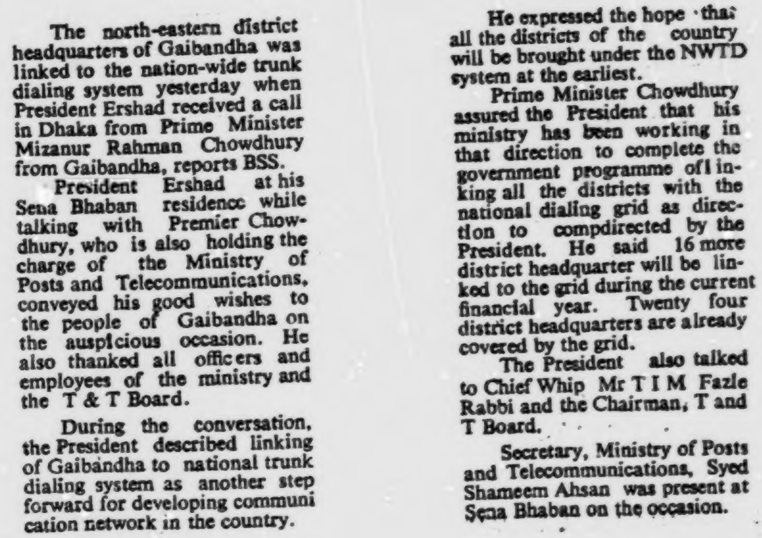
CSO: 5540/008

BANGLADESH

ERSHAD INAUGURATES NORTHEAST TELEPHONE LINK

Dhaka THE NEW NATION in English 15 Aug 86 pp 1, 8

[Text]



The north-eastern district headquarters of Gaibandha was linked to the nation-wide trunk dialing system yesterday when President Ershad received a call in Dhaka from Prime Minister Mizanur Rahman Chowdhury from Gaibandha, reports BSS.

President Ershad at his Sena Bhaban residence while talking with Premier Chowdhury, who is also holding the charge of the Ministry of Posts and Telecommunications, conveyed his good wishes to the people of Gaibandha on the auspicious occasion. He also thanked all officers and employees of the ministry and the T & T Board.

During the conversation, the President described linking of Gaibandha to national trunk dialing system as another step forward for developing communication network in the country.

He expressed the hope that all the districts of the country will be brought under the NWTD system at the earliest.

Prime Minister Chowdhury assured the President that his ministry has been working in that direction to complete the government programme of linking all the districts with the national dialing grid as direction to compdirected by the President. He said 16 more district headquarter will be linked to the grid during the current financial year. Twenty four district headquarters are already covered by the grid.

The President also talked to Chief Whip Mr T I M Fazle Rabbi and the Chairman, T and T Board.

Secretary, Ministry of Posts and Telecommunications, Syed Shameem Ahsan was present at Sena Bhaban on the occasion.

/13046
CSO: 5550/0165

U.S. TEAM APPRISED OF TELECOM NETWORK PLAN

Madras THE HINDU in English 10 Sep 86 p 6

[Text] New Delhi, Sept 9--The 19-member telecommunication trade mission from the United States now here on a ten-day tour, was apprised by the Department of Telecommunication of the perspective plan to improve telecom network in India and of the prospects for American firms to collaborate by transfer of technology and knowhow besides supply of equipment.

The visiting team led by Mr H.P. Goldfield, Assistant Secretary in the U.S. Commerce Department, met the Union Communications Minister, Mr Ram Niwas Mirdha, and later had discussions with a team of officials of the Department of Telecommunications (DOT) headed by the Secretary Mr D.K. Sangal, on Monday.

Mr Mirdha noted that already the DOT had floated a global tender for import of digital transmission system and said the American companies could bid for this. He also recalled the liberalised policy of allowing the private sector to manufacture equipment required at the subscriber's premises like telephone instruments, PABX, cables etc. This, he said, offered scope for the American firms to enter into collaboration with Indian firms in their manufacture. He suggested that the American firms could avail themselves of the expertise of the Telecommunications Consultants India Limited (TCIL) for projects in third countries.

At the meeting with the officials, the visiting team was given an idea of the ambitious plan chalked out by the DOT to improve telecom services and particularly the proposal to provide telephone on demand by 2000 A.D. Mr Sangal welcomed any assistance that the American firms could offer to achieve this objective. He noted in this context that in the past the U.S. firms were not enthusiastic in transferring technology or knowhow or supplying equipment in the telecom field.

Changed position: Mr Goldfield explained that the needs of U.S. were so heavy that the entire indigenous production was used to meet them and there was very little scope for export to other countries. The situation had changed and the U.S. firms were now in a position to offer equipment and technology to other countries on mutually beneficial terms.

Bellsouth International Inc, one of the firms represented on the team, is interested, among other things, to offer its services in specialised telecom network like cellular radio, fibre optics, microwave systems and cable communications services. It is currently pursuing three proposals which include a network determining needs for new offices outside plant equipment for Mahanager Telephone Nigam, a private network for the Steel Authority of India Limited, and a cellular and paging feasiblity study with the TCIL.

Another firm--Rockwell International--is exploring a joint venture to manufacture fibre optics communication products besides analog and digital microwave products. Scientific Atlanta wants to market a wide range of products like tracking antenna systems, automatic antenna measurement systems, telecom test equipment, radar cross section equipment, multipurpose satellite communication receivers, filters, etc. Currently, this firm is pursuing contracts for tracking antenna systems to the Defence Research Laboratory.

Another member of the team, Sperry Corporation, which has ongoing relationship with Air India and Indian Airlines, is pursuing a contract with Indian Railways. It is interested in selling mainframe computer line and other products. A wide range of telecom services like network planning, economic analysis, project management and network engineering has been offered by the Hawaiian Telephone Company whose representative is on the visiting team.

The other firms on the team are: Communication Satellite Corporation offering technical consultancy services; AT and T offering network systems, switching systems, transmission systems and information systems; Fairchild Industries Inc interested in selling medium-sized on-premises satellite earth teminals, star network communication systems, low speed time division multiple access satellite communication systems, wide range of telecom equipment and services; and ITT Asia Pacific, which is keen to market switching and transmission systems besides collaborating in local production of modern digital PABX.

/9317
CSO: 5550/0008

INDIA

REPORTAGE ON MASS COMMUNICATIONS CONFERENCE

26 August Proceedings

New Delhi PATRIOT in English 27 Aug 86 p 5

[Text]

India has an awesome task of educating 160 million children by 1990, and it could not be completed by depending upon the traditional system of education, University Grants Commission chairman Prof Yashpal said in the Capital on Tuesday.

Delivering his speech at the main plenary session of the five-day conference of the International Association for Mass Communication Research, Prof Yashpal said the use of non-formal education and the open university system were a step in the direction of fulfilling that objective.

The per capita telephone availability in the country, he said, was very low. It was very difficult and costly to provide phones in more than five lakh villages in the country, he said.

New communication technology, through satellites could be useful in fulfilling the needs of educating the masses. With the help of satellites, educational programmes could be broadcast in far flung villages.

Prof Yashpal said if receiving centres were set up in Third World countries, these could help in picking up messages from developed countries in no time.

This facility could be used for agriculture, weather forecasting, education and extension service.

A paper circulated at the conference, based upon a research report prepared for 'Information Overload Information Underuse Project' of United Nations University, said after 10 years of fruitless efforts to change the international communications system, it made people wonder what went wrong.

Two things particularly worrying are—the Third World following very contradictory paths of complaining against imperialism and dependence in content related issues and neglect of crucial flows of specialised information on which development depends most.

Overwhelmed by debts, low productivity, unfair terms of trade, Third World can so well demonstrate the reality of this. Because of it, the linkages between knowledge distribution and Third World's sheer incompetence to bargain better in the world market should be the central issue now.

The calls for a new international information order never referred to the usefulness of information. The political and cultural impacts of the media were discussed to the point of exhaustion, but no serious attention was paid to how useful information must be in order to upgrade the capacity to master the conditions of one's own life and fix terms of international relationships, the paper said.

The paper concluded by saying 'the countries that clamoured for information autonomy have utterly failed to assert a will to get independent in the production of information technologies'.

The plenary session was chaired by Mr James D Halloran, president of the International Association for Mass Communication Research (IAMCR). It was also addressed by Mr S T Kwame Boafo from Ghana, Mr Aggrey Brown from Jamaica, Mr Cees Hamelink from the Netherlands, Mr Softan Jakob from Hungary and Mr John Lent from the USA, add agencies.

Mr Boafo said communication technology and resources are tools which, like all development tools, can be systematically employed to aid the development process.

Penultimate Day's Session

New Delhi PATRIOT in English 29 Aug 86 p 3

[Text]

Adverse effects of crises like Bhopal gas tragedy or Chernobyl can be contained by more intelligent communication, a discussion on communication ethics and responsibilities in transnational crises agreed on Thursday.

The experts were meeting under the aegis of the International Association for Mass Communication Research and conference, on the penultimate day of their five-day conference.

Professor Bob J Carrell of the University of Oklahama, USA, drew a matrix that can help organisations gauge communication needs in such crises situations. Prof Doug Newsom of Texas Christian University, USA, pointed out that ideologically divergent approaches to communication had not made much difference in that the concerned governments failed to alert the people exposed to the dangers of Three Mile Island and Chernobyl. She called for a global crisis communication plan to form part of other international agreements.

Dr Dean Kruckeberg of University of Northern Iowa, USA, called for a comprehensive code of ethics to help transnational corporations respond to crises. While such a code for handling crises communication would be difficult, the group agreed that it should definitely be attempted.

In two comprehensive sessions devoted to communication technology and its role in international communication, discussion ranged from wide-ranging global issues to specific uses of technology for mobilising social action.

Dr H Fredrick of USA said that an electronic aggression in the form of religious, political, and commercial propaganda has invaded Nicaragua. This is a violation of international norms, he said.

Professor K Nordenstreng of Finland warned that if the western media continue to do to Unesco what they did to the League of Nations, the organisation would fold up.

Mr K K Jayan, of the University of Kerala, presented a case study on how a wide communication package was used to mobilize a voluntary movement in Kerala. As a result, people were more aware both of basic information in science and its social implications.

/9274
CSO: 5550/0004

INDIA

MOVE TO COUNTER CHINESE BROADCASTS

Calcutta THE STATESMAN in English 1 Sep 86 p 9

[Text]

HYDERABAD, Aug. 31.—With a view to countering Chinese boadcasts, the Government of India, under the North-Eastern Region Television Expansion Programme, had decided to install 5,000 direct reception colour monitor sets in the region in the next three years.

Supplying the sets for the Rs 39-crore project of the Ministry of Information and Broadcasting had been entrusted to the Hyderabad-based Electronics Corporation of India Limited, a public sector undertaking under the Department of Atomic Energy, its group general manager, Mr S. N. Telang, said here yesterday. Cost of the sets would be Rs 12 crores.

A Rs 30 crore project for the manufacture of main frame computers based on fourth generation technology, using large scale integrated circuits, would be set up near the ECIL complex, Mr B. S. Prabhakar, its managing director, disclosed. The computer, Cyber-180, in two models, would be produced in collaboration with a reputed American company.

The computers, costing between Rs 80 lakhs and Rs 1.5 crores, would have wide-range uses in engineering and scientific applications. ECIL proposed to send about 25 of its scientists to the USA for training by next month-end and the project was expected to go on stream next year, Mr Prabhakar said.

ECIL had received a letter of intent from a Russian firm for the supply of 60 satellite earth stations, worth over Rs 60 crores, Mr Prabhakar said.

ECIL's computer-based data acquisition system had been commissioned at the Raichur thermal power plant of the Karnataka Power Corporation. These systems had been designed, engineered and installed entirely through its in-house knowhow.

In the consumer electronics field, ECIL had produced over 75,000 TV sets, including 40,000 colour sets, during 1985-86. A licence to manufacture VCRs was expected shortly, Mr Prabhakar said.

The instruments group of ECIL had manufactured and supplied electronics systems for use in vital sectors, including the Defence Ministry.

ECIL had supplied and installed several security systems like the X-ray Baggage Inspection System and the Automatic Fire Alarm System at the domestic and international airports in New Delhi and Bombay. Its production target for 1986-87 was of the order of Rs 140 crores, Mr Prabhakar said.

/9274
CSO: 5550/0006

PLANS TO IMPROVE TELECOMMUNICATIONS TOLD

Madras THE HINDU in English 1 Sep 86 p 6

[Text]

NEW DELHI, Aug. 31.

The technology "mission" to ensure better communications, prepared by the Department of Telecommunications (DOT), envisages a massive investment of Rs. 55,000 crores over the three successive Plans from the current one, and has, as its main objective, customer satisfaction in the telecommunications field as a whole.

If the mission fructifies, by 2000 AD, telephone connections will be provided on demand, international subscriber dialling will be available to all countries, the fault rate reduced to less than one per telephone a year, the call success rate will be over 90 per cent for all categories and telegrams will be delivered within 12 hours anywhere in the country.

In a recent presentation of the mission details to the Science Adviser to the Prime Minister, Prof. M. G. K. Menon, the DOT officials have conceded that the telecom service today falls far short of the customer expectations with poor availability of connections, inadequate reliability and poor sensitivity to the customers. There are only 3.2 million connections now and the waiting list is a million. The average waiting period is four years and the maximum waiting period, 20 years. There are only 20,000 public call offices for 150 millions population in the urban areas and 22,000 for 5.7 lakh villages.

Investment projection: According to DOT, the investments required will be Rs. 6,000 crores during the Seventh Plan, Rs. 15,000 crores during the Eighth Plan and Rs. 34,000 crores in the Ninth Plan, to achieve the objectives of the mission.

The objectives have been worked out in four time-frames-those to be achieved in a very short run of a year, in two years, by the end of the Seventh Plan period and by the end of the Eighth Plan period.

Improving customer interface: By the end of 1990, the mission seeks to improve customer interface by simplifying rules and procedures, on the one hand, and by staff training and customer orientation to the staff, on the other. The service quality will be improved by reducing the fault rate and increasing the call success rate. At present, the national fault rate average is one per telephone for every quarter or four a year. The worst is one fault in 45 days and the best is one in a year. The national average is sought to be reduced to 2.5 a year by 1990 and to less than one by 2000 AD.

The call success rate now averages 95 per cent for local calls, 70 per cent for junction calls and 20 per cent for STD calls. It is sought to be improved to 97 per cent by 1990 and 99 per cent by 2000 AD for local calls, to 90 per cent and 98 per cent for junction calls and to 50 per cent and 90 per cent for STD calls respectively.

Accessibility is sought to be improved considerably by increasing the local public telephones to five per cent of the exchange capacity and increasing the STD public telephones to 10,000 and rural telephones to 30,000. The waiting period for selected services like telex, leased circuits and satellite business terminals is also sought to be reduced and new services introduced.

Plan to go digital: The DOT feels that technology inputs needed are being worked out, but the plan is to go digital in a big way. The Telecommunications Research Centre (TRC) is being reconstituted into two organisations- telecommunications engineering centre and telecommunications research centre.

The former will be an integral part of the DOT, responsible for finalising the specifications, carrying out initial tests and field trials, approving introduction of new technology products into the telecom network and helping to solve the day-to-day network problems. The latter will be an autonomous society with funds flowing from DOT and the public sector undertakings in the field of telecommunications to take up development of specific telecommunication products for the network in a time-bound programme.

/9274
CSO: 5550/0005

INDIA

BRIEFS

TELEGRAM DELIVERY IMPROVEMENT--Cochin, 30 Aug (PTI)--The Union Communication Ministry has initiated measures to ensure delivery of telegrams within 12 hours of booking from any part of the country, Union Communications Minister Ram Nivas Mirdha, said here today. Laying the foundation stone for the Rs 10 crore, 6,000 line telephone exchange building at Palarivattom here, he said about 10,000 telegraph offices would be brought on the automatic message switching system within the next two years to achieve this objective. The Rs 85 crore project would also include replacement of all electromechanical teleprinters with electronic teleprinters. The Minister, who had talks with top officials of the Kerala Electronic Development Corporation (KELTRON) at Trivandrum yesterday, said KELTRON would take up the manufacture of indigenously developed store and foreward telegraph systems (SFT) and pulse code modulation (PCM) systems which would help quicker transmission of telegrams. [Text] [New Delhi PATRIOT in English 31 Aug 86 p 5] /9274

JAMMU, KASHMIR PHONE LINK--Srinagar, 28 Aug--Jammu and Kashmir will be connected with 14 countries through International Subscriber Dialling System (ISDS) in the current financial year. The countries are Britain, the United States, Australia, Austria, Belgium, France, Hong Kong, Italy, Japan, Holland, Malaysia, Singapore, West Germany and Turkey. Disclosing this at a press conference in Srinagar today, the general manager telecommunications, Jammu and Kashmir circle, Mr P. K. Khindri, said several other countries would be linked with the state through this facility in the next five years. [Text] [Calcutta THE TELEGRAPH in English 29 Aug 86 p 7] /9274

SUPER COMPUTER NETWORK--Pune, 30 Aug (PTI)--Four super computers would be linked with district headquarters with the help of a satellite for instant information on water and power research by next year, Dr Z. S. Tarapore, director of the Central Water and Power Research Station (CWPRS), said here today. Speaking at the inaugural function of a seminar on "computer-based integrated information system", Dr Tarapore said the information explosion will cut down distance and time in supply of the solution and information on design and research aspects of water and energy resources. He said "a super computer is already working at Delhi, while another will be commissioned in September at Pune and two others at Hyderabad and Bhubaneswar for the operation, control, data acquisition and analysis relating to water and power resources which will be connected with district headquarters through satellite. Dr Tarapore said the National Information System for Science and Technology (NISSAT), UNESCO and the UNDP (United Nations Development Programme) aided

Rs 1.76 crore "water and power information system (WAPIS) was commissioned at CWPRS (Pune) and the Central Water Commission (CWC) and the Central Board of Irrigation and Power (CBIP) at New Delhi in 1982. The resident representative of UNDP, G. N. Hamdy, said the total project spanning a period of about five years through May 1987, "entails UNDP inputs of 800,000 US dollars by way of expatriate expertise, training abroad and equipment". "The Union Government's own commitment to the project is more than Rs 8.8 million", he said. Mr Hamdy said the computer work station of the project would alone cost 300,000 US Dollars, which would be processed through UNESCO. [Excerpt] [New Delhi PATRIOT in English 31 Aug 86 p 5] /9274

CSO: 5550/0007

PLANS FOR NEW TELECOMMUNICATIONS EQUIPMENT REPORTED

LD271806 Tehran Domestic Service in Persian 1630 GMT 27 Sep 86

[Text] A production line for the manufacture of field telephones was commissioned today, the sixth day of War Week--named Economic Jihad Day. The ceremony was attended by the ministers of defense and of post, telegraph, and telephone. The manufacturing unit is part of Iran Communications Industry, a subsidiary of the Defense Industry Organization.

Commenting on the production of this particular telephone system, the director of Communications Industry said this is a fully electronic system with a much higher efficiency than foreign-manufactured telephones. Pointing out that the new system is at present being used by Islam combatants in various operational theaters, he referred to other projects on hand by the communications industry. He said: Together with military production, certain studies have already been carried out concerning the required commercial communication systems. One of these systems is a calling device [farakhan] which enables individuals to establish contact from their homes with those they wish to speak to.

Then there is another project involving a mobile telephone system which can be used within city limits and on roads. Furthermore, certain steps have also been taken to manufacture a device to transmit pictures as well as the production of personal minicomputers.

/9738
CSO: 5500/4701

NIGERIA

BRIEFS

ANAMBRA TELEPHONE EXCHANGE--The Federal Military Government has invested ₦122 million in the provision of telecommunications facilities in Anambra State. Communication minister, Col Tanko Ayuba, announced this at Nsukka, at the commissioning of a 2,000 line capacity ITT Penta Conta Telephone exchange in the area. Col Ayuba said that the commissioning of the Nsukka telephone exchange brings to ten, the number of such exchange in the state. He disclosed that the Federal Military Government spent ₦10.209 million in the completion of the project. The minister announced that a new digital International Telephone Switching Centre (ITSC), similar to the ones in Lagos, and Kaduna, was being proposed for Enugu. According to him, "the ITSC will be linked directly to the two international gateway at Lagos and Kaduna via dedicated circuits." Col Ayuba announced that 60 circuits through Port Harcourt-Benin-Auchi-Akure-Ibadan were provided to connect Enugu-Lagos with another additional 72 circuits, aimed at providing eacy accessibility to and from the Eastern states. The Chief of Air Staff, Air Vice Marshal Ibrahim Alfa, who officially commissioned the project, made a trunk call to Lagos that got the Chief of General Staff, Commodore Ebitu Ukiwe. In their welcome address, the people of Nsukka called for an international direct dialing telephone system, that could enable them [to] have contact with their overseas friends. They appealed to the federal government to help speed up communication within the local government that make Nsukka zone, by establishing telephone facilities in all the local governments of Nsukka. The people appealed to the minister to direct the installation of a telephone service at the Enugu Ezike post office completed nine years ago. Photo shows Air-Vice Marshal Ibrahim Alfa cutting the tape to declare the exchange open, watched by Mr Uchidiuno NITEL, MD (right) and Col Ayuba (2nd from left). [Text] [By Ikechukwu Ani and Iyke Iloka] [Enugu DAILY STAR in English 17 Sep 86 p 4] /9274

CSO: 5500/1

TELECOMMUNICATIONS LOAN AGREEMENT SIGNED WITH FRANCE

AB021245 Dakar Domestic Service in French 2200 GMT 1 Oct 86

[Excerpts] The French Central Fund for Economic Cooperation [CCCE] and the Senegalese National Telecommunications Company [SONATEL] on 1 October signed a 7.5-billion CFA franc loan agreement for the partial funding of SONATEL's project known as the Grand-Dakar Project. Moussa Toure, secretary of state in the Ministry of Economy and Finance, signed on behalf of the government. Ibrahima Bayo was present at the signing ceremony this afternoon.

[Bayo] Well, during the ceremony, Moussa Toure underlined the exemplary nature of the cooperation between Senegal and France, the periodicity and the volume of CCCE contributions, and the priority sectors in which its funds are invested. One of such sectors is the telecommunications which the minister said constitutes the very basis of the development of a country.

[Begin Toure recording] The Grand-Dakar Project, a very ambitious project, will require 16.5 billion CFA francs. The CCCE, as we have said, will provide 7.5 billion CFA francs, that is 45 percent, while SONATEL will provide another 7.5 billion, and 2 billion will come from the private sector. [end recording]

This loan brings to about 14.750 billion CFA francs the CCCE's loan to Senegal for the development of our telecommunications. This afternoon's loan is for 17 years with a 5-percent interest rate and will enable the SONATEL to establish new telephone exchange centers for 11,000 lines [words indistinct].

/8309
CSO: 5500/13

SADF UNVEILS NEW COMMUNICATIONS SYSTEM

MB251405 Johannesburg SAPA in English 1308 GMT 25 Sep 86

[Text] Pretoria 25 Sep SAPA--A multi-million rand South African Defence Force Communication system, providing "guaranteed" communication between units anywhere in the country, was unveiled at the official opening of the Wonderboom military base north of Pretoria today.

The project officer of the "ebbehout" system, Commandant John Calmeyer, told military correspondents the system had been linked with the international communication system, enabling "an officer sitting under his favorite thorn tree (on the border) to talk to anyone he wants to." The system used the tropo-scatter effect--the bouncing of radio waves off the lonosphere--obviating the need for line-of-vision micro-wave links.

But the system used micro-wave links as well to provide a complete command and control telecommunications sytem for the entire defence force, and certain state departments. Telegraphy, speech, facsimile and data transmission were all accommodated by the system, which also utilized digital technology, commandant Calymeyer said. Ebbehout enabled any commander in any unit to communicate with any other commander, no matter where they were, in top secret mode, he said.

The system functioned according to the principle that no facility within it may be off-line for more than 30 minutes within any 24-hour period. It also had auto-alarms and fail-safe systems.

Commandant Calymeyer said ebbehout had first been "conceptualized" in 1968 and formally approved in 1972. It had been thoroughly tested during a military exercise called operation Thunder chariot. Ebbehout was possibly the most technologically advanced system of its kind in the world, if one excluded systems which used satellites, but even that was debatable, the commandant claimed. The system would be continuously updated, while other projects, one of which entailed satellite technology, were also being run.

/12624
CSO: 5500/12

SOUTH AFRICA

BRIEFS

NEW TV TRANSMITTER ANNOUNCED--A new television transmitter to serve the southern parts of Pretoria North and surrounding areas is to begin operating next Monday. The transmitter is one of several low-powered transmitters being introduced by the SABC to improve television reception in certain areas. The station will transmit a signal of 20 watts each for TV1, TV3, and TV4. The transmission of TV1 will operate on channel 55, while that of TV3 and TV4 will operate on Channel 59. The first month of operation will be a test period, during which time transmission may be interrupted without warning or apology, in order to carry out necessary adjustments or correct faults. [Text] [Johannesburg Domestic Service in Afrikaans 0830 GMT 26 Sep 86 MB] /12624

CSO: 5500/12

ZIMBABWE

SATELLITE DISHES WILL RECEIVE OVERSEAS TV, RADIO PROGRAMS

Harare THE FINANCIAL GAZETTE in English 3 Oct 86 p 5

[Text]

A LOCAL engineering company, Hubert Davies, recently started manufacturing satellite dishes which can receive overseas television and radio programmes. The project is probably the first of its kind in this country.

Managing director, Mr Keith Battye, said that the company became interested in the manufacture of satellite dishes about two years ago, following the success of a similar project in America where hundreds of thousands of dishes have already been installed at private homes.

Through research, it was found that Zimbabwe could receive television and radio signals from the several orbiting communication satellites around the earth, because of its proximity to the equator.

The company has already firm orders for about 32 dishes, and plans to make 100 by September 1987, he said. "We are installing the first one at the moment. It only works on colour television sets but the picture quality is excellent".

The dish, about 6m in diameter, is being made from local steel, and costs about $3 500. However, there are other essential electrical components that have to be imported from countries such as America, Japan or South Africa, which could cost another $3 000.

Mr Battye said that the company will not be responsible for the imported components, and individual buyers will be required to apply for import licences from the government.

"Unfortunately, most of the channels that can be received at the moment are not English. However, there are several channels one can tune to, especially the American programmes, live football coverage and even the Asian games. (A satellite can carry up to 16 channels).

"A lot of people I have spoken to are very keen to keep abreast with world news and television programmes, and are interested in the dishes. We can also export to neighbouring countries but at present, we do not know what are the restrictions and regulations in these countries", said Mr Battye.

/9274
CSO: 5500/15

BRIEFS

TASS: SOUTHEAST ASIAN AGREEMENTS--Ho Chi Minh City, 25 Sep (TASS)--An agreement was signed here on Wednesday on the expansion of cooperation in the sphere of information, between TASS and the VIETNAMESE NEWS AGENCY VNA. Also signed were agreements on cooperation between TASS and the Lao News Agency, KPL; and the Cambodian News Agency, SPK. The agreements were signed by Sergey Losev, TASS general director; Dao Tung, VAN general director; (Bonteng Vongsa), KPL general director; and (Em Sam An), SPK general director. They were taking part in a conference of heads of news and press agencies of the socialist countries in Ho Chi Minh City. Hoang Tung, secretary of the Vietnamese Communist Party Central Committee, was present at the signing. [Text] [Moscow TASS International Service in Russian 1137 GMT 25 Sep 86 LD] /9738

CSO: 5500/1001

JOINT ITALIAN, GERMAN, FRENCH CAD-VLSI PROJECT

Turin ELETTRONICA E TELECOMUNICAZIONI in Italian May-Jun 86 pp 69-77

[Article by Engr Girolamo De Vincentils, Dr Luciano Leproni, CSELT (Telecommunications Research and Study Center), Turin: "Planning Large-scale Integration Circuits"; manuscript received by editors on 19 February 1986.]

[Summary]

Very large scale integration circuit project. The paper describes the CVT research project (CAD-VLSI for Telecommunications), whose aim is to implement CAD tools and methodologies for the design of VLSI integrated circuits. The CVT project, partially funded by EEC within the "Microelectronics Programme", has been launched and coordinated by the research centers for telecommunications of Italy (CSELT), France (CNET) and Germany (FI/DBP). The project involves 28 Research Organizations in the above 3 Countries; it has 3 duration years and ends in 1986. The paper outlines the reasons for the research and the main features of the implemented integrated CAD system. This includes: a) programs for design data management and designer-machine interactions; b) system for circuit description, analysis and synthesis at the architectural level; c) tools for test pattern generation and validation at the architectural level; d) a system for interactive generation of chip floor-plan; e) various tools for layout generation of functional blocks. The paper concludes with information on the results obtained and the foreseen research developments.

[Text] 1. Introduction

The CVT project ("CAD-VLSI for Telecommunications") is a research project aimed at developing advanced planning techniques based on the use of the computer ("CAD: Computer Aided Design") with relation to very complex integrated circuits (VLSI: Very Large Scale Integration).

This project is promoted and coordinated by the following: the Telecommunications Research Centers in Italy (CSELT [Telecommunications Research and Study Center], Turin, of the STET [Telephone Finance Corporation] Group), in France (CNET [National Telecommunications Study Center, Grenoble], and in Germany (FI/DBP [Research Institute of the German Federal Post Office Attached to the Telecommunications Central Exchange, Darmstadt); these three research centers coordinate and collect the contributions from the principal research centers working in the CAD area for integrated circuits in the respective countries. Figure 1 shows the complete setup of the university and industrial laboratories involved.

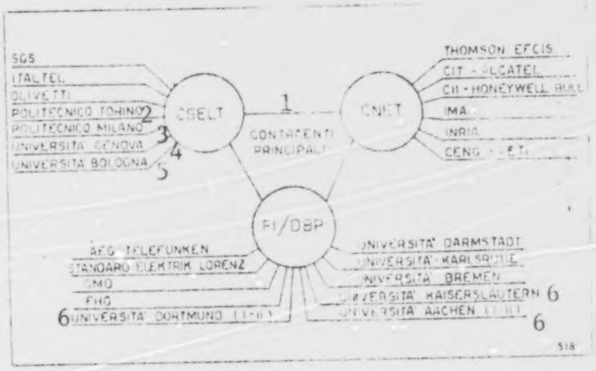

SGS
ITALTEL
OLIVETTI
POLITECNICO TORINO
2
POLITECNICO MILANO
3
UNIVERSITA' GENOVA
4
UNIVERSITA' BOLOGNA
5
CSELT
1
CONTRAENTI
PRINCIPALI
CNET
THOMSON EFCIS
CIT - ALCATEL
CII - HONEYWELL BULL
IMA
INRIA
CENG
FI/DBP
AEG TELEFUNKEN
STANDARD ELEKTRIK LORENZ
GMD
FHG
6
UNIVERSITA' DORTMUND
UNIVERSITA' DARMSTADT
UNIVERSITA' KARLSRUHE
UNIVERSITA' BREMEN
UNIVERSITA' KAISERSLAUTERN
6
UNIVERSITA' AACHEN
6
518

Figure 1. Agencies participating in CVT (CAD-VLSI for Telecommunications) project

Key:
1. Principal contractors
2. Turin Polytechnical College
3. Milan Polytechnical College
4. University of Genoa
5. University of Bologna
6. Universities in FRG

The CVT project was launched in 1983 and is scheduled to be completed in April 1986; the resources committed over 3 years of research come to a total of 333 man-years, including 132 supplied by Italian agencies (50 by CSELT). The EEC shares in the costs to the extent of 50 percent and included the project among those approved for the Microelectronics Program.

The project's purpose is to build a prototype of an integrated CAD system which will enable telecommunications systems to plan the systems directly "on the basis of silicon," in other words, by making full use of the potential of modern microelectronic technology.

2. Motivations behind CVT Project

There is no doubt that the performances of modern industrial systems are determined to an ever greater degree by the technologies that are employed. In particular, it is fundamental for planners of telecommunications systems to be able to master and exploit the technology of VLSI circuits because this can make it possible to overcome the barriers represented by cost, complexity, and reliability which still restrict the performances of telecommunications systems.

The problems to be solved are not so much tied to the technology (devices containing up to one million transistors are already in production) but rather to the capacity to plan in terms of acceptable time frames and costs. For example, making designs pertaining to a circuit, such as the one shown in Figure 2 (a voice synthesizer with a total of about 30,000 transistors designed by CSELT) as of now--even with the aid of CAD equipment available commercially--entails an expenditure of several billion lire and a planning time of several years.

Figure 2. Example of integrated VLSI circuit (voice synthesizer designed by CSELT with NMOS 4 μ m, made by SGS). [not required]

It follows from this that VLSI circuits are now being designed and made only when they give a guarantee to the effect that they can be used in a large quantity so as to be able to distribute the project's cost over a large number of products; this is true of memories and microprocessors which are used in various industrial applications and sectors.

But it is true that, if it were possible to have integrated circuits designed on an ad-hoc basis for specific applications (the so-called ASIC's--Application Specific Integrated Circuits), it would be possible to achieve a radical design simplification in telecommunications systems; it would thus be possible to reduce their manufacturing cost, size, and power consumption while at the same time improving their performances and their degree of reliability, also achieving greater industrial protection (use of electronic components owned by the user).

To attain this purpose, it is necessary drastically to reduce the design times and costs of VLSI-ASIC circuits; a reasonable objective is to plan integrated circuits consisting of several hundreds of thousands of transistors with time frames and costs (several months, several hundred of millions of lire) that would be comparable to those now necessary for the development of multilayer printed grids.

This leads to the need for drastically simplifying the traditional methodology used in designing integrated circuits, as shown in the rough diagram given in Figure 3.

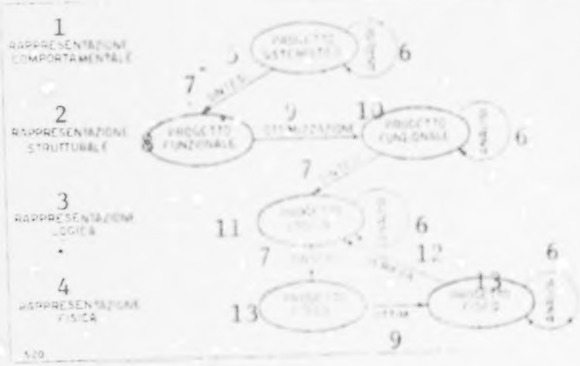

1
RAPPRESENTAZIONI COMPORTAMENTALE
2
RAPPRESENTAZIONI STRUTTURALE
3
RAPPRESENTAZIONI LOGICA
4
RAPPRESENTAZIONI FISICA
5
6
7
PROGETTO FUNZIONALE
8
9
OTTIMIZZAZIONE
10
PROGETTO FUNZIONALE
6
7
11
6
7
12
6
13
13
9
520

Figure 3. Traditional design diagram for VLSI circuits

Key:
1. Performance description
2. Structural description
3. Logic [software] description
4. Physical description
5. System project
6. Analysis
7. Synthesis
8. Functional project
9. Optimization
10. Functional project
11. Logic project
12. Verification
13. Physical project

The traditional design process is developed through a long series of successive refinements of the circuit's functional and structural description; but it would instead be necessary to be able to have synthesis programs capable of automatically generating the design of the manufacturing masks (layout) on the basis of a description of the circuit on a high level (function to be performed or simply architectural layout with functional blocks).

These programs--usually called "silicon compilers," because they are supposed to perform a task similar to the task performed by the high-level language compilers in use for the development of software--are an ambitious objective of the most advanced CAD research activities.

Some results on the route of "silicon compilation" have by the way already been achieved in the case of circuits with logic families (the so-called "gate arrays") or standard cells. These circuits (for which figures 4 and 5 show some achievements of the CSELT based on SGS technology) are designed at the level of the logic diagram, using and interconnecting the elementary logic functions or the slightly more elementary functions (cells) for which mask designs are already available and where the operating mode is known (for example, the switching time).

Figure 4. Example of integrated circuit with logic families ("gate array"); the photo at the bottom shows a part of the photo on top, enlarged about eight times.

Figure 5. Example of integrated circuit with standard cells.

Circuits of this type are called "semicustom" semiconductors by manufacturers since they employ functions of the standard type to put together circuits that are of specific interest to the customer.

The peculiar aspect of these circuits is that programs are available for them which make it possible automatically to obtain the layout from the logic diagram; this is possible since, as we said before, the design for the manufacturing masks (layout) of the cells is already available and, moreover, the problem of interconnection is simplified by the fact that the cells were given standardized shapes and dimensions (as we can see, for example, in detail in Figure 4 [not required]).

With the help of the "semicustom" methodologies, one can economically design circuits with a somewhat limited complexity, on the order of several thousands of elementary logic gates. Their field of application however is rather significant; it is certainly true that these circuits are being used increasingly and that their dissemination is based on the recent assertion of commercial CAD systems based on a computer set aside for a single user, the so-called work stations.

It is however quite clear that systems based on circuits of this type and also on advanced standard products, such as microprocessors with 16 or 13 bits, with memories of 256 kbits, while permitting better product quality and savings in production, do not turn out to be substantially different in architectural terms from those designed during the second half of the 1970's. The move toward a successive system generation, based on ad-hoc designed components, remains entrusted to the possibility of economically and in a short time designing very complex circuits through more powerful "silicon compilers."

The prospects because valid instruments of this type would be commercially available in Italy over the next several years are rather poor. The "silicon compilers" are currently the subject of research being done by the most advanced industrial laboratories and normally some time passes before the results of this research reach the market; here it suffices to think of the CAD for semicustom circuits which have been in use for several years now by the Bell Laboratories; they are only now appearing in Italy in the work stations; and anyone who has used these systems knows from experience that they are being placed on the market in an often premature development stage, with insufficient performances and a rather low degree of reliability.

While commercial prospects are rather poor, the situation concerning access to information available at American universities and laboratories is no better; this situation is rendered increasingly difficult if not impossible by American federal standards.

There is therefore a danger that, within a few years, big companies, such as IBM, AT&T, and NEC, for example, which for quite some time have been devoting much in the way of resources to the development of electronic CAD, will be able to put on the market electronic systems based on VLSI-ASIC's which cannot be equalled, in terms of price and performances, by similar systems built with the traditional components; the "imitation" of these systems will also be a very tough job, precisely because of the difficulty of replicating sophisticated integrated circuits that are not available commercially.

Hence the very existential requirement for the builders of electronic systems not to fall behind in the capacity to design silicon; hence the motivations which several years ago persuaded the EEC to promote, through the "Microelectronics Project," research in the CAD sectors for integrated circuits, giving preference to cooperation on the European level.

It was as a matter of fact unthinkable to tackle research projects designed to work out a complete system of CAD for VLSI by relying only on the resources available within the company or even national context because the problems to be tackled are difficult and complex; this is an undertaking that involves experts from various professional fields, such as physicists, technologists, mathematicians, data processing specialists, electronic circuit specialists, and system engineers; the amount of work to be done is such as to require hundreds of man-years.

Fully aware of these necessities, which are particularly strongly felt in a research center institutionally devoted to promoting the development of telecommunications through the design and construction of systems with a high innovation content, the CSELT in 1982 took the opportunity offered by the EEC and promoted the initiative of a vast collaborative effort with counterpart

European research centers; this initiative was specifically expressed through the implementation of the CVT project.

3. The CVT System

3.1. System's Salient Features

The CVT is a computer program system for supporting the design of integrated VLSI circuits devoted to applications in the field of telecommunications.

There are two main guidance criteria which determine its characteristic features: flexibility and efficiency.

As regards flexibility, the system was given a modular structure (see Figure 6) which makes it possible to give the designer the best instruments for each field of application. The system, as a matter of fact, includes specific instruments for designing the architecture of microprocessors, of numerical signal processors and of control units; moreover, the system can be adapted to the reasoning style inherent in each designer, thus enabling him to work on the basis of his own preference either on graphic diagrams or on text descriptions and to generate the "layout" by making selections among alternative methodologies, in other words, automatically, either in a symbolic manner, or manually, in the traditional manner (that is to say, with the help of a specialized graphic system), or simply through the use of procedural language.

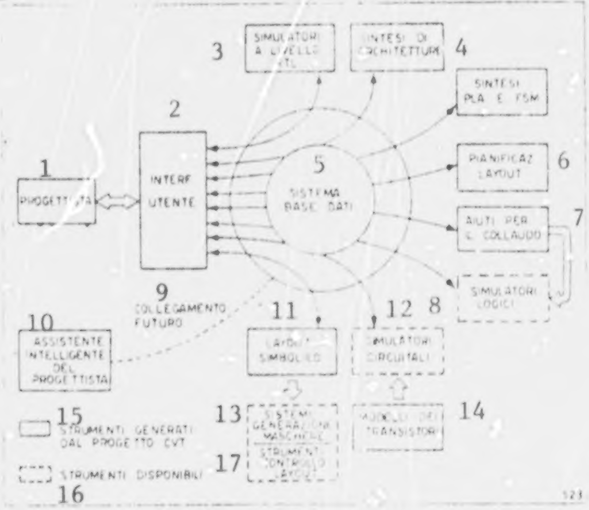

3
SIMULATORI A LIVELLO RTL
SINTESI DI ARCHITETTURA
4
SINTESI PLA E FSM
2
1
PROGETTISTA
INTERF UTENTE
5
SISTEMA BASE DATI
PIANIFICAZ LAYOUT
6
AIUTI PER IL COLLAUDO
7
9
COLLEGAMENTO FUTURO
11
12
8
SIMULATORI LOGICI
10
ASSISTENTE INTELLIGENTE DEL PROGETTISTA
LAYOUT SIMBOLICO
SIMULATORI CIRCUITALI
15
STRUMENTI GENERATI DAL PROGETTO CVT
13
SISTEMI GENERAZIONE MASCHERE
MODELLI DEI TRANSISTORI
14
17
STRUMENTI CONTROLLO LAYOUT
STRUMENTI DISPONIBILI
16
123

Figure 6. "Software" structure of CVT system (CAD-VLSI for Telecommunications)

Key:
1. Designer
2. Interface with user
3. Simulators at RTL level
4. Architecture synthesis
5. Data base system
6. Layout planning
7. Testing aids
8. Software simulators
9. Future connection
10. Designer's intelligent assistant
11. Symbolic layout
12. Circuit simulators
13. Systems for generation of masks
14. Models of transistors
15. Instruments generated by CVT project
16. Available instruments
17. Layout control instruments

As regards efficiency, the objective pursued here was to cut the costs and the design time down to at least one-fifth compared to those necessary by using only instruments available on the market today.

This is achieved through the use of instruments that are complementary with respect to those normally in use; here are the main instruments developed within the context of the CVT project and they will be illustrated below (see Figure 7): instruments for the definition and design of the system's architecture, that is to say, the functional block diagram; at the same level, instruments for the generation and checking of test sequences; programs for generating the circuit's block planimetry (floor plan layout); programs for the automatic synthesis of the layout of specific software/circuit functions.

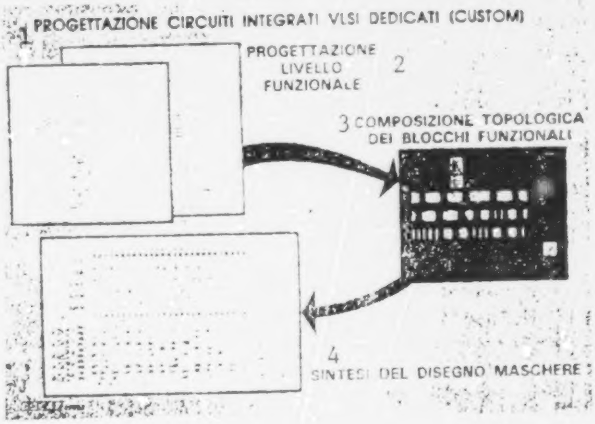

1 PROGETTAZIONE CIRCUITI INTEGRATI VLSI DEDICATI (CUSTOM)
PROGETTAZIONE LIVELLO FUNZIONALE
2
3 COMPOSIZIONE TOPOLOGICA DEI BLOCCHI FUNZIONALI
4
SINTESI DEL DISEGNO MASCHERE

Figure 7. Simplified design methodology

Key:
1. Design of specifically allocated integrated VLSI circuits (custom)
2. Design, functional level
3. Topological makeup of functional blocks
4. Synthesis of mask design

Furthermore, to attain the above-indicated flexibility and efficiency features, considerable resources were devoted to the preparation of the necessary software and hardware infrastructures.

In particular, a software diagram of standard data was adopted for all programs and the software was made for managing the data base. Moreover, a supervision program was worked out and it was given the task of helping the designer both by guiding him in the choice of the CAD instruments to be used during the various work phases and by supplying him with an uptodate situation of the state of progress of on-going work.

As regards the hardware, a hierarchical system of calculating machines was adopted, as shown in Figure 8. The work stations permit efficient interactive use of the system, especially when work of a graphic type has to be done, while more demanding numerical processing functions are assigned to a more powerful centralized computer that is linked to the work stations through the local grid.

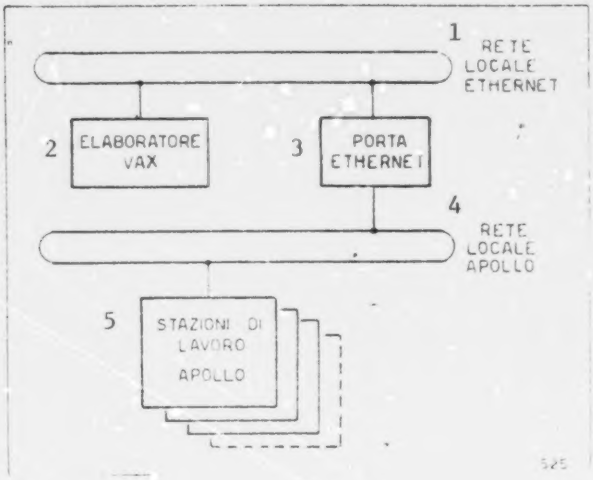


Figure 8. "Hardware" structure of CVT system

Key:
1. Local ethernet grid
2. VAX data processing machine
3. Ethernet gate
4. Local Apollo grid
5. Apollo work stations

3.2. Software Architecture

A circuit is essentially designed in two phases: description of functional nature of circuit (input-output behavior and diagram of calculations to be performed in order to achieve said behavior); sequence of transformations of functional description until said article is obtained.

In the case of integrated circuits, the description of the produced article consists of the definition of the geometry of the masks to be used in the photolithographic manufacturing processes, observing the rules representing the tolerances of the manufacturing process itself.

In this context, the CVT is a complex of programs that makes it possible to pin down the specifics of the high-level performance of the circuit and that supports the operations involved in the transformation of the performance description until one gets the description of the design of the masks.

The programs (or instruments) can be grouped logically according to the diagram given in Figure 9.

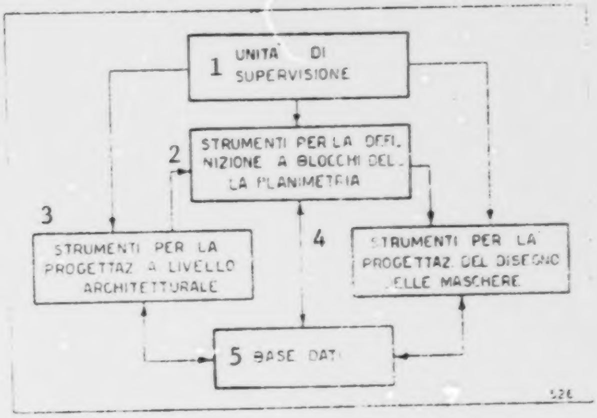

1 UNITA' DI SUPERVISIONE
2 STRUMENTI PER LA DEFINIZIONE A BLOCCHI DELLA PLANIMETRIA
3 STRUMENTI PER LA PROGETTAZ A LIVELLO ARCHITETTURALE
4 STRUMENTI PER LA PROGETTAZ. DEL DISEGNO DELLE MASCHERE
5 BASE DATI
526

Figure 9. Architecture of CVT software

Key:
1. Supervision unit
2. Instruments for definition of floor plan layout
3. Instruments for design on architectural level
4. Instruments for planning the design of the masks
5. Data base.

3.3. Principal Application Programs

3.3.1. Instruments for Design on Architectural Level

As we said earlier, the field of application of the CVT system is very vast; with its help, as a matter of fact, one can design programmable machines, machines devoted to a specific application, and control units.

Here are the planning phases which are supported by the instruments incorporated in the system.

(a) Spelling Out Functional Specifics

These specifics concern the following, depending on the above-listed classes of machines:

(a_1) definition of repertory of instructions and description of their implementation through microinstructions;

(a_2) specifics of conversation between machine and surrounding environment and description of algorithm, made by machine, through flow of micro-operations;

(a_3) specifics of machine in finished states which will model the control system.

(b) refinement of description of functional specifics, through successive incremental steps, until obtention of detailed description of machine's logic-arithmetic unit;

(c) functional specifics of control unit regarding flow of logic-arithmetic operations;

(d) synthesis of control unit according to the following alternate styles or a combination of same:

(d_1) machine in states finished with PLA technqiues;

(d_2) microprogram;

(d_3) self-timing circuits.

(e) checking operation through simulation.

(f) checking diagnosticability and generation of test sequences.

The product of this design phase is a diagram illustrating the structure of the circuit made up of functional blocks at the transfer level between registers (typically, ROM, RAM, registers, counters, multiplexer, bus, etc.).

An incomplete list of the main instruments used in supporting the abovementioned phases is given in Table 1.

Table 1. Instruments for Design at Architectural Level

Name	Function	Agency Responsible for Development
KARLENE	Text language for mixed performance and structural descriptions	IMAG
ABLED	Graphic editor for strucural descriptions	CSELT
KARL III	Test language and simulator for structural descriptions	University of Kaiserslautern
ASMA	Language for description of machine with finished states	CSELT
FSM	Finished-states machine generator	University of Karlsruhe, Milan Polytechnical College, University of Genoa
TIGER/FERT.	Programs for generation of testing sequences and for checking in case of failures	CSELT OLIVETTI
EDIFICE	Generator of numerical filters	CNET
DACAPO	Programs for synthesis of self-timing circuits	University of Dortmund

3.3.2. Instruments for Defining Floor Plan Layout

Schematically speaking, the result of design at the architectural level is illustrated in Figure 10.

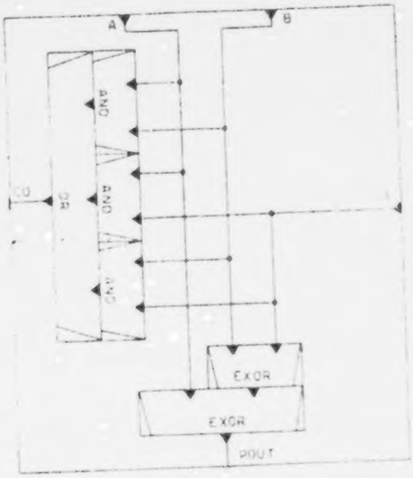


Figure 10. Example of ABL diagram (A Block Language)

The data that are relevant for this, in other words, the list of functional blocks and their interconnections, are worked out by a set of programs called ARIANNA, made by CSELT in collaboration with the University of Genoa, to extract the floor plan layout from the design of the masks.

During this phase, the processing can be subdivided into the following logical subphases: topological evaluation of functional blocks, their positions, creation of "channels" within which will be allocated the interconnections, tracing of interconnections, compacting and possible local creation of empty spaces for introducing variants at the last moment, which is followed by further compacting.

The topological evaluation consists of establishing correspondence between the functional blocks and the "physical" blocks (cells) for which the shape and the dimension are being defined.

Visually (see Figure 11), the cells consist of rectangles that define the area within which will be extracted the layout of the corresponding logic function and of the input-output gates.

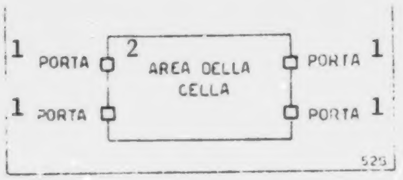


Figure 11. External view of a cell
Key: 1. Gate 2. Area of cell

The data pertaining to the cells can either be extracted from heuristics or they can be taken from a library of cells designed or inserted by the designer on the basis of an estimate founded on his own experience.

During the initial placement phase, ARIANNA calculates a bidimensional permutation for the purpose of minimizing a cost function which takes into account the occupation of the area and the total length of the connections.

For this kind of work, as for the successive work pertaining to the execution of the interconnections between the blocks, ARIANNA has available various strategies (or algorithms) which are applied according to a predetermined sequence.

The environment in which the programs work however is interactive in the sense that the user can, at each step, close the automatic procedure to check the partial results, vary, at his discretion, the sequence of application of algorithms, manually introduce modifications that will immediately be controlled to check that no errors will be introduced.

Figure 12 shows a floor plan layout generated by ARIANNA.

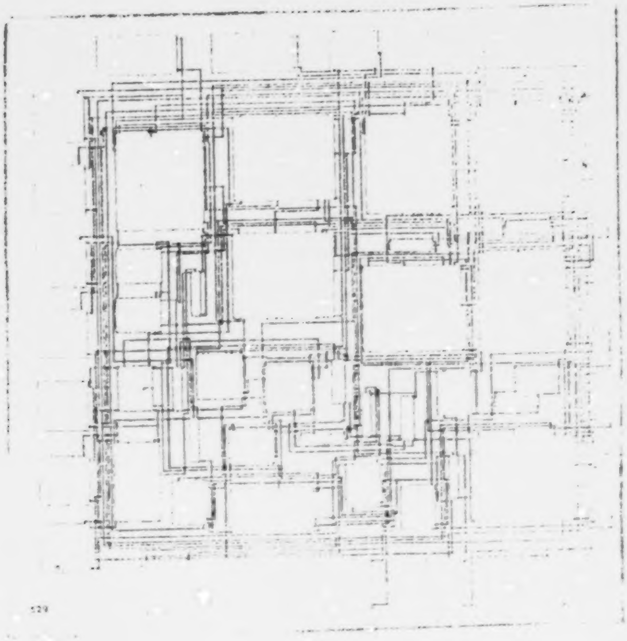


Figure 12. Example of floor plan layout generated by ARIANNA

3.3.3. Instruments for Planning the Design of Masks

During this third and last phase, the design of the masks is completed with the definition of the geometries constituting the cells.

For this purpose, various instruments are made to enable the designer, on the one hand, to make compromises between the optimization of the project and the completion times and, on the other hand, to follow his own planning style.

In particular, the system makes the following available:

(a) Automatic generators (example: FSM; Edifice). They are programs, written in PASCAL, which, at the input, accept parameters that specify both the functional nature of the cell and its physical-electrical characteristics (shape, dimension, delay time) and which, after execution, are able to generate the geometries of the masks.

(b) Environment for designing at symbolic level. In this environment, the designer can define, by means of a graphic editor, the topology of the deisgn by specifically putting in the symbols that represent basic items, such as transistors, contacts, and loads and by designing the interconnections. Programs automatically generate the geometrical shapes corresponding to the symbols and compact the design while observing the rules of the process.

(c) A procedural language. It makes it possible to define the topology of the design by using the typical programming style. The procedural nature of the language makes it possible to define the design in a parametric form by expressing, for example, in a concise form, the repeatability of some geometrical shapes. After execution, the program can generate the compact design of the masks.

(d) A graphic editor. It makes it possible to define the exact geometries of the design. The feature that makes it more advanced with respect to the commercial models is the capacity to signal violations of rules of the process on-line.

Some programs for checking complete the list of instruments for this design phase; here they are: electrical simulators, units that extract the electrical features from the design, checker of process rules.

An incomplete list of the main support instruments for this phase is given in Figure 2.

Table 2. Instruments for Design at Physical Level

Name	Function	Agency Responsible for Development
FLAP	Automatic generator of design of PLA	University of Genoa
SYMBAD	Environment for symbolic design of cells	SGS
SELLAY	Procedural language	University of Darmstadt
EDICVT	Graphic editor	FHG
DOMOS DOSCA	Electrical simulators	University of Dortmund
PLEX	Extractor of characteristics	AEG
BRUTUS	Checker of project rules	GMD

3.4. System Programs

The objects that are produced and handled by a CAD system are very complex; they are as a matter of fact made up of a vast collection of data with multiple relations among them.

To make cooperation between the various system application programs effective, it is necessary to work out an agreement on the organization of the data and on their interpretation.

From the more general viewpoint, the agreement adopted within the CVT is illustrated in Figure 13.

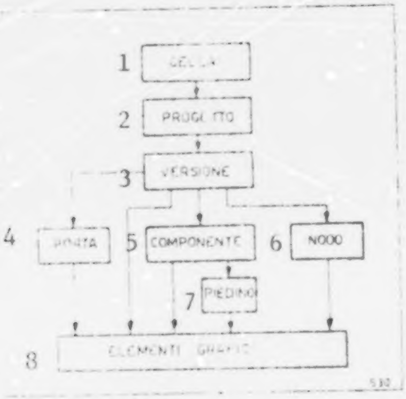


Figure 13. Software diagram of data organization

Key: 1. Cell
2. Project
3. Version
4. Gate
5. Component
6. Node
7. Foot
8. Graphic elements

All of the items illustrated in Figure 13 are of the type: "is made up of ... ."

Following the diagram in Figure 13, one design object is a cell (for example, a voice synthesizer) which is identified by a single name. A cell is a grouping of "projects" [designs] that differ from each other by virtue of the technology employed (for example, N-MOS or CMOS) for the methodology or as software alternatives (each "project" [design] is a grouping of "versions" that represent a particular temporary stage in the "project." A "version" is characterized by an external list (outline and connections with external mode, made up of "gates" that are the input-output places, "components," which are instantaneous expressions (by that we mean the characterization of a general model in a particular context) of "versions," and "nodes" which are lists of connections between "gates" and "feet" [stems] (the latter are the input-output gates of the components).

Combined with the scheme illustrated here, software procedures were made and were standardized for the creation and handling of the objects; they permit easy and efficient access to the data base management system.

Another important infrastructure program of the system is the supervisor or "monitor" program. It works in close cooperation with the data base and essentially performs three functions:

(1) giving the designer easy interaction with instruments present in the system. This is done graphically by demonstrating to the user the graph of dependences of instruments with respect to the input data and permitting only

those operations that are in keeping with the predetermined methodology and the state of work progress (see Figure 14);

(2) making available library functions which permit the holding or interrogation of the state of the free library itself;

(3) on-line aid for interaction within the system to prevent the consultation of manuals as much as possible.

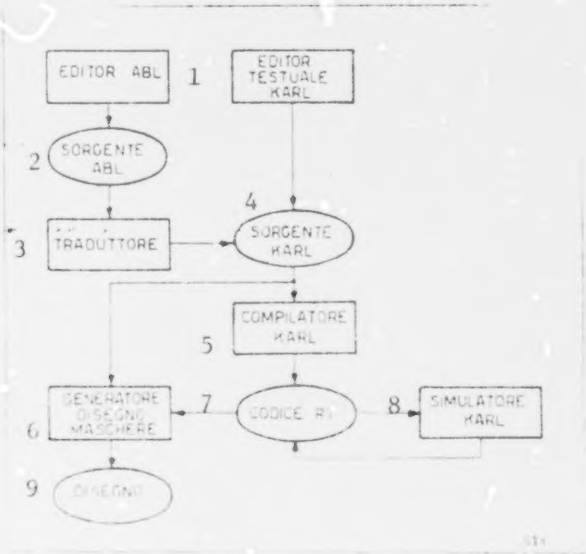

EDITOR ABL
1
EDITOR TESTUALE KARL
2
SORGENTE ABL
4
3
TRADUTTORE
SORGENTE KARL
COMPILATORE KARL
5
GENERATORE DISEGNO MASCHERE
7
CODICE RT
8
SIMULATORE KARL
6
9
DISEGNO

Figure 14. Example of diagram shown on display screen of "monitor" program

Key:
1. KARL text editor
2. ABL source
3. Translator
4. KARL source
5. KARL compiler
6. Mask design generator
7. RT code
8. KARL simulator
9. Design

The above-described programs were made by CNET as regards the data base and by CSELT as regards the monitor.

3.5. Other Research Activities Included in CVT Project

In the preceding paragraphs we illustrated the basic diagram of the CAD system of the CVT, in other words, the software interconnection and the functional nature of all of these programs which are a direct help to the designer during the circuit-making phase.

Other research activities, only indirectly tied to the CAD system, were also included in the CVT project.

Among these we must, first of all, mention research conducted in the context of modelling the units (for example, junctions). The capacity to combine hundreds of thousands of transistors on a single silicon plate is directly correlated, on the one hand, to the capacity to master geometries on the order of a micron and, on the other hand, by the capacity to anticipate the electrical behavior of the units made with such geometries.

In the CVT, with the coordination of the SGS, which is directly concerned with such problem complexes, work was done to study the physical effects to be taken into account, the equations which model them, and the numerical methods for solving such equations; also prepared were programs simulating the behavior of the transistors which yielded optimum agreement with the experimental measurements. Programs were furthermore made to extract the parameters to be used in the models that were included in the circuit simulators.

Other very important problem complexes in VLSI planning have to do with the capacity to master the complexity aspect at the system level. Against this background, it is fundamental to be able to subdivide the calculation in such a way that it can be performed simultaneously by several circuit blocks.

As part of the CVT, the Turin Polytechnical College made programs for the formal description of the message exchange record between the various blocks and for the simulation of same; the Milan Polytechnical College furthermore proposed architectural designs for the solution of specific problems that are based on repetitive arrays of simple elements, tolerating breakdowns.

Finally, we must mention the problem complexes tackled by the CSELT with relation to the formal checking of descriptions at a high level. In the context of systems designed for synthesis, it is extremely important--in order to obtain correct solutions for construction--to furnish "formally" correct descriptions at the input to these programs; this cannot be guaranteed by the normal simulation procedures.

As we know, the problem is very complex. Using techniques of artificial intelligence, very promising routes were proposed as part of the CVT and they will certainly be pursued as the research effort is carried on.

4. State of the Art and Prospects

The project is now in the completion phase. The entire prototype of the system was put together in the laboratories of the three prime contractors: CNET, CSELT, FI/DBP.

The important work of checking the performances out is now under way. For this purpose, the test vehicle used is the voice synthesizer mentioned in the introduction, which is being redesigned on the basis of CMOS technology, using the CVT system.

The first results obtained have been judged to be more than just satisfactory; in the course of the project itself, moreover, individual programs were evaluated with the use of suitable vehicles deriving from real design cases.

At the end of April 1986, the prototype will be shown to the EEC representatives and to experts coming from the most important European industrial establishments.

During the project, the EEC itself had already displayed satisfaction with the partial results that were achieved gradually. Proof of this is the acceptance of a research program, called CVS (CAD dor VLSI System), which will be started at the end of the CVT and which will be based on the results achieved in the CVT itself.

The purpose is to keep the design costs low and the design times short for circuits with a complexity of around one million transistors.

Here are the basic research development lines included in the CVS project:

parallel and regular architecture: they will be incorporated into the calculation model system which, on the one hand, will permit the parallel execution of that system and, on the other hand, the use of repetitive structures;

synthesis instruments at the functional level: they should make it possible automatically to derive processors devoted to the solution of specific problems;

circuits that can be tested through construction: the synthesis instruments will have to include rules that will make it possible to derive structures aimed at testing;

system of aid to the design of the procedural cells: this will have to facilitate the reduction of the costs involved in refining the programs for the generation of the software block design;

system of aid for the synthesis of the analog cells.

Techniques deriving from the area of artificial intelligence will be used widely in designing the system.

5. Conclusions

In this article we illustrated the salient lines and the results of a research project which was partly financed by the EEC and which was aimed at making a CAD system prototype for the design of VLSI circuits to be used in telecommunications.

The project led to a gathering of a large number (28) of participating French, German, and Italian entities, drawn both from university and from industrial laboratories.

While it is true that this vast collaborative effort did entail a by no means negligible management workload, it is also true that this experience can be called very positive and fruitful.

In particular, the possibility of bringing about the collaboration of a considerable amount of highly qualified resources drawn from different disciplinary backgrounds (computer science, circuit design, mathematics, physics, etc.) did, on the one hand, make it possible to conceive a very ambitious research program that was extended so as to cover a large portion of the CAD problem complex and, on the other hand, to explore alternate routes to the solution of particular problems.

Acknowledgements

Here we must mention the persons who contributed to the project's good outcome.

The list would be too long which is why we confined ourselves to the persons who are most representative of the Italian agencies that collaborated in the project:

Dr Giorcelli, Dr Patrucco, engrs Girardi, Giandonato, and Gandini, of CSELT; Professor Antognetti, University of Genoa; Professor Sami, Milan Polytechnical College; Professor Baccarani, University of Bologna; professors Conte and Del Corso, Turin Polytechnical College; engrs Molina and Vanzi, and Dr Capocelli, SGS; Dr Gorla, ITALTEL; and Mr Grasso, Olivetti.

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CSO: 5500/2414

EUROPEAN AFFAIRS

MATRA JOINS WORLD LEADER NOKIA IN CELLULAR PHONE DEAL

Matra Nokia Radiomobiles Established

Helsinki HELSINGIN SANOMAT in Finnish 9 Sep 86 p 35

[Article: "Mobira Enters French Markets, Goal Is Marketing Directorship of Mobile Phones With Matra"]

[Text] Nokia's affiliate Mobira and the French firm Matra have established a joint venture in France for manufacturing and selling cellular phones in the French markets.

The name of the new company is Matra Nokia Radiomobiles and with a slight majority the French hold the ownership. Nokia owns 49.8 percent of the shares, Matra owns nearly the same amount, and the small remaining percentage of shares is held by the French Indosuez Bank.

The new company will manufacture and market equipment to the newly established French national mobile phone system, Radiocom 2000.

In the opinion of Nokia President Kari Kairamo, it is more a question of marketing than production cooperation. Both companies will deliver components to Trappes in France where the assembly will take place. The agreement will not be of great significance for employment at Mobira's plants in Finland.

According to Kairamo, the joint venture will attempt to reach a sales goal of approximately 200 million francs or 150 million Finnish markkaa next year. It is anticipated that there will be "several thousand subscribers" annually to France's mobile telephone network in the next few years.

The cellular phones to be assembled at the French plant will be marketed under Matra's as well as Mobira's name. According to Mobira Managing Director Jorma Nieminen, the probability is that jointly it will be possible to acquire a greater market share by this method than by using one name. Nieminen points out that Mobira's as well as Televa's telephones are sold even in Finland.

The joint venture with Matra did not start from zero. Mobira has had various contacts with the company for 5 years already and without this relationship it is doubtful that a joint venture agreement would have been concluded, thinks Nieminen.

According to Nieminen, France will be a large and important marketing area for cellular phones in the future. Only a year ago 80 percent of Europe's cellular phone markets was in the Nordic countries, but now construction on a system in England is progressing well, France began operations this year, and West Germany will also have a system in the near future.

No Common Standard

A different system will be put into operation in all these countries since the EC could not reach an agreement on a common standard. Of the world's seven most important mobile telephone standards five are in Europe. This does not, however, mean that Western Europe will not be able to find a unified standard sometime in the future.

In addition to its old relationship with Matra, Mobira's choice in favor of Matra was influenced by the fact that Matra is the company chosen by France's telecommunication administration for building a mobile telephone system. However, the agreement between Mobira and Matra only concerns telephones.

The marketing situation with respect to cellular phones in the whole world is such that half of the telephones are sold in the United States, the second most important area is the Nordic countries, and then the remainder of Western Europe and Southeast Asia.

According to Nieminen, Mobira is the leading trademark in the Nordic countries and even elsewhere in Europe. In light of the sales figures for 6 months it appears that Mobira is the leader in the whole world, thinks Nieminen.

The capital stock of the newly formed company is 20 million francs. The managing director will be Jean-Francois Blondel.

Matra is a French government owned electronics company, whose sales turnover of approximately 10 billion Finnish markkaa is mostly from military production. Nokia's contractual partner is Matra Communications, which deals only in civilian production.

France's new right-wing government has decided to privatize Matra this year. The same will apply to the state owned Thomson company, which will become one of Matra-Nokia's competitors in France's mobile telephone markets.

Nokia's Mobira Leads in Sweden

Helsinki HELSINGIN SANOMAT in Finnish 19 Sep 86 p 34

[Article by Timo Vuorela: "Mobira Number One in Sweden"]

[Text] Stockholm--Mobira, which is owned by Nokia, has during the current year become the market leader in Sweden's mobile telephone markets. However, it has only a very slight lead on its major Swedish competitor, the giant Ericsson Company.

The number of Nokia-Mobira cellular telephones is increasing rapidly in Sweden. In the first 8 months of the current year 23,000 new units were connected to the telecommunications network.

The increase in sales was 30 percent in comparison with the corresponding period last year. It is expected that this year's total sales will be 600--700 million kronor (425--500 million markkaa).

Mobira's share of Sweden's markets is now nearly 25 percent, said Assistant Managing Director Ake Gullberg. Mobira has been number one elsewhere in the Nordic area for a long time already.

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CSO: 5500/2405

FRANCE

BRIEFS

DGS SUBSIDIARY QUITS VAN PROJECT--The value added network (VAN) project between the Italian manufacturer Olivetti, the commercial bank Suez, and the DGT subsidiary Telesystems would be stillborn. The reason? The powerful Direction Generale des Telecommunications will no longer authorize its subsidiaries to enter the VAN market. Olivetti-Suez-Telesystems contemplated creating a company with capital equitably distributed into one third between each partner and offering value added services in the financial field of the European market. Announced several weeks ago, this project was one of three official candidates. IBM associated with Sema-Metra and Paribas, and Bull with General Electric were also in the running. Caught between numerous outside pressures which are pushing toward deregulation and an increasingly greater desire for autonomy by some subsidiaries, DGT hence opted to block the action. It thus indicates its intention to keep the upper hand completely on new promising markets. While tension is rising on this VAN market, doesn't this decision run the risk of giving the ultimate advantage to IBM whose project appears to be the surest? Big Blue's ambitions cover not only the service offer but also the transport. As a matter of fact, some fear that this DGT "Colbertism" may discourage the rare investors ready to take risks. [By Yann Le Gales] [Text] [Paris LES ECHOS in French 18 Aug 86 p 6] 13112/12947

CSO: 5500/2732

ICELAND

BROAD-BAND CABLE NETWORK ENVISIONED FOR REYKJAVIK AREA

Reykjavik MORGUNBLADID in Icelandic 22 Jul 86 p 2

[Article: "Cable Network For 20-30 Television Channels"]

[Text] The Post and Telegraph Administration Has Begun to Install Plastic Conduit in Streets

The municipalities in the metropolitan area and the Post and Telegraph Administration have recently been conducting informal discussions about the installation of a cable system in the metropolitan area which in the future might be used for general and specialized telephone service, as well as for distribution of television programs on 20-30 channels.

According to the ideas which have been discussed, the plan is for the Post and Telegraph Administration to establish a so-called "broad-band system" which will transfer messages to and from connecting points; 2-3,000 users will then be hooked up with the so-called "user system." The new cable system will make it possible to transmit material to the metropolitan area as a whole, as well as to defined parts of the area, such as individual municipalities or neighborhoods. The first step of this project is to install a plastic conduit system in the metropolitan area for telecommunication cables.

It has also been mentioned that the Post and Telegraph Administration will establish a interim system for distributing television material on five UHF channels; this material would primarily be received via satellites, as well as material received from domestic program producing companies. Such a system might replace the purchase of satellite dishes for receiving satellite transmissions in general.

"The cable system is still in its infancy," said Bergthor Halldorsson, engineer for the Post and Telegraph Administration. "Several meetings were held with representatives from the municipalities and it was decided to appoint a committee to discuss the follow-up. However, that committee has not met yet. We expect that these matters will be well on their way by next fall."

"According to a regulation issued by the Ministry of Education this winter, no one is authorized to install a cable and a distribution system unless the Post and Telegraph Administration has approved it. For this reason, we have hired one person to handle these affairs."

"We want to establish cooperation with the municipalities in installing the plastic conduit so that it will be possible to combine the installation in conjunction with various other projects, and that the installation of the conduit will in the future be a fixed part of the work involved in the preparation of new neighborhoods.

The Heating Service is working on many projects this summer and quite a number of streets are being opened up. We have therefore used the opportunity and installed conduit in these streets, which we had specially made for this purpose for example, in Hverfisgata. It is also planned to install conduit in the new Saebol section in Kopavogur. We do not know yet whether we will ever use this conduit, but we do not want to take the risk of loosing one more summer with regard to projects. It is the opinion of most people that it is imperative that a solution be found in this matter as most people do not relish the idea of in the future having a satellite dish on every roof.

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MINISTER INAUGURATES AUTOMATED LONG DISTANCE MOBILE SYSTEM

Reykjavik MORGUNBLADID in Icelandic 4 Jul 86 p 4

[Article: "Automated Long Distance Mobile Telephone System Opened: 'I Primarily View the Mobile Telephone As a Safety Factor,' Said Minister of Communications Matthias Bjarnason"]

[Text] An Automated NMT mobile telephone system was opened here yesterday which is the same system that is used elsewhere in the Nordic countries where there are about 300,000 mobile telephones in use. This mobile telephone system is a joint Nordic design and is the only system that can be connected with other countries. The mobile telephones are for sale on the general market and the price is from 80,000 to 110,000 kronur. The initial cost is 3,500 kronur and the rate is 6 kronur per minute nationwide.

Minister of Communications Matthias Bjarnason opened the new system by calling Prime Minister Steingrimur Hermannsson, who is also former minister of communications. Minister Bjarnason said in a speech he gave at the opening ceremony that he primarily viewed the mobile telephone system as a safety factor, although other people preferred to call it luxury. Now, rescue squads, for example, and especially seamen could be in better contact with their homes and relatives than was possible before. Haraldur Sigurdsson, chief engineer with the Post and Telegraph Administration, said that seven types of mobile telephones are available in the country. They are all different and offer various options, although they are similar in all main features, as all have to meet certain standards. He said that the system would cost the Post and Telegraph Administration a total of 150 million kronur and 100 million kronur had already been spent.

The area code for the mobile telephone system is 985 and the mobile telephone numbers will all have five digits and they will all begin with the figure 2. When dialing from a regular telephone to a mobile telephone, it is necessary to dial the area code 985 first and then the mobile telephone number. When dialing from a mobile telephone, the procedure is exactly like dialing from a regular phone except the area code is always dialed first, with the exception of the special service numbers of the telephone system which begin with 0.

The central exchanges have been installed in the following places: Reykjavik; Skalafell; Akranes; Borgarnes; Skaneyjarbunga; Grof; Stykkisholmur; Flatey; Budardalur; Thingeyri; Bildudalur; Botnsheidi; Baejum; Thorbjarnarfjall; Eyrarbakki; Burfell and Hafell. Testing has been conducted during the past weeks with good results, according to the spokesmen of the Post and Telegraph Administration. The areas from Isafjordardjup and east of Vik in Myrdal to Hafell have good connections, but the service area will increase soon and several mother stations will be put in use in several places in the northern part of the country and in the Austfirdir.

All telephone numbers in the country and outside the country can be dialed from the mobile telephones in the service areas. It is possible to call to a mobile telephone from all domestic telephone numbers and foreign telephone numbers if the mobile telephone is within the service area. It is hoped that by the middle of the summer, testing of a total of 30 mother stations in all four parts of the country will have been finished.

Mobile telephone users will have the choice of various special services. One service will be transfer of calls to another telephone number when the mobile telephone is disconnected, and another service will be that if the call is not answered within 20 seconds, the station will transfer the call to another number previously selected by the mobile telephone user. It is also possible to make cancellation of overseas calls dialed from the respective mobile phone at the station. Other services will be available in the future, for example, automatic and manual message service; it will be possible to use Icelandic mobile telephones elsewhere in the Nordic countries and mobile telephone pay phones will be available as well. Also available will be computerized memory of telephone numbers; lock; time meter; counter and itemized bills.

The plan is to put 30 additional mother stations into use next year, and the service area for the mobile telephone system will cover all the densely populated areas and main highways by the end of the year. At a later date, mother stations will be installed in areas where they will be considered to be needed and the number of service lines will be increased accordingly.

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CSO: 5500/2701

BRIEFS

ITALCABLE INAUGURATES EUROPE-ASIA CABLE LINK--Rome, 18 September 1986. ITALCABLE [Italian Underwater Telegraph Cable Company], a company in the IRI-STET [Industrial Reconstruction Institute--Telephone Finance Corporation] Group, and the National Telephones State Board, together with the representatives of another 21 European, Arab, and Asian countries, participated in putting together an integrated telecommunications telephone cable system called SEA-ME-WE which constitutes the first artery of this kind directly to link Europe to South East Asia through the Indian Ocean. The project cost a total of $400 million and is made up of eight support points, respectively, at Singapore, Indonesia, Sri-Lanka, Djibouti, Saudi Arabia, Egypt, Palermo, and Marseille. ITALCABLE is furthermore directly responsible--together with the French and Egyptian managers--for putting in the project's two Mediterranean sections which will link Palermo, respectively, to France and Egypt. The sophisticated transmission plant will then be further boosted by the simultaneous construction, in the Far East, of two additional links; the first one will reach Hong Kong and Taiwan from Singapore and the other one will reach Australia through Indonesia. [Text] [Rome TELEINFORMATICA 2000 in Italian 15-18 Sep 86 p 1] 5058

SIP 'DATA-NETWORKS'--Milan, 22 September 1986. The sale of connections to the new SIP [Italian Telephone Company] network-CDN [direct numerical links] will begin next December; the new facility was created to offer company users inter-city numerical links which are "specifically set aside" and which are specialized for data transmission. By the end of the year, the new "CDN" network will serve 80 localities with a capacity for 5,000 connections. GAZZETTA UFFICIALE will publish the ministerial decree that will establish the official rates for the new service. [Text] [Rome TELEINFORMATICA 2000 in Italian 18-22 Sep 86, p 1] 5058

CSO: 5500/2413

ELEKTRISK BUREAU GROUP EXPANDS IN SIZE, ENTERS NEW FIELDS

Mobile Phones, Digital Telex

Oslo AFTENPOSTEN in Norwegian 18 Aug 86 p 34

[Article by Kjell Aaserud: "EB on the Right Track"]

[Text] In the first six months, the operating income of the EB group increased 30 percent from 1,130 to 1,460 million kroner, the operating profit was 85 million kroner, ordinary income after financial transactions 56 million kroner, while the final six months of last year were negative. A positive profit development is expected in the second six months as well, which generally has a stronger impact than the first six months.

Following the Plans!

"We can only state that we are on course; that the plans are being followed," Almskog tells AFTENPOSTEN. The positive aspect is that all main areas are meeting their budget goals. Previously there was always one which pulled the figures down. We have taken care of large unprofitable units. Highly skilled employees are being moved from unprofitable sections to areas which yield satisfactory income, so that the effect is doubled. Within the company we have been focussing strongly on the need for profitability. The employees have picked up the "baton". In other words, we have more highly motivated employees. But in addition to improving profitability we have another main goal--to enter Norway with digital telephone centers."

On Course Again?

"And now EB has come in the back door after the delay with the system 12.?"

"In any case, we got a foot in the door. We received an order for 50,000 lines after the AXE-system, we received substantial orders for mobile centers, and a digital telex center for Northern Norway. The first digital telephone center from us will go to Frogner in Oslo and will be operational towards the end of November. We will do everything we can that at least we will not have any delays. We will do what we can to get "on track" again in the Norwegian telenetwork."

"But I will readily admit that it will take hard work to get there," says Almskog who feels that the starting position is a good one. "What we are doing in the field of telecommunications is based on the AXE-system. It has its best reference in its worldwide distribution with 8.6 million installed lines, more than 14 million lines including those which are on order in altogether 65 countries. Although L.M. Erichsson which developed AXE has gradually reduced its ownership interests in EB the cooperation between us has developed further. This is true of, for instance, a new generation of house telephone centers, where also Televerket's commercial communication (TBK) is involved in a development agreement."

Strong in Aircraft Control

"EBE TeleCom will now deliver communications systems for air traffic control centers at airports in Belgrade and Zagreb in Yugoslavia. They will be operational next summer and will mean total deliveries amounting to 20 million kroner. We for our part believe that our system is among the best in the world. It is our hope that this can develop into a large business area in the coming years.

The previous EB Scanword, which cost the company a lot of money, has been redesigned extensively. We are again left with what we are really good at--communications--in the EB information systems. The development there has more than met expectations. Sales are increasing 80-90 percent and will reach 500 million kroner of usable income on an annual basis.

In the area of defense communications we are also moving ahead. In this area we have an excellent cooperation with Standard Telefon and Kabelfabrik and with L.M. Erichsson. In this field we alone have backorders--nationally and internationally--of between 400 and 500 million kroner."

Goal not Reached?

"From what I have said here follows that EB views the development with optimism. But at the same time we are prepared to face tough times ahead. The economic development will play a part, but also the situation that we ourselves will never be finished with reconstructing and improving."

"Why didn't EB buy Wessel Kabel?"

"A brief answer: The price was too high for us to justify it towards ourselves and our shareholders."

"EB has a better profit and stock exchange development than STK. Will the tele-agreement be as expensive for EB as for STK?"

"It is not possible to answer this question. On the other hand, I do believe that STK will overcome the technical difficulties.

Friendly Takeover Adds Strength

Oslo AFTENPOSTEN in Norwegian 30 Aug 86 p 36

[Article by Kjell Aaserud: "Electrical Giants Merge"]

[Text] In the new year, Elektrisk Bureau (EB) will take over Elektro Union (EU). This will result in one of Norway's largest industrial firms with approximately 9,000 employees and sales of approximately six billion kroner in 1987--definitely the country's largest firm in electrical engineering/electronics. It is expected that EB must pay the owner of EU, Investa, approximately 750 million kroner, which corresponds to the asset value.

To finance the purchase, EB will increase its present capital stock by 158 million kroner through a public subscription at a premium of 4-5 times this fall, which will bring in 250-300 million kroner. The rest--400-500 million kroner--will be financed through loans.

It will be a friendly takeover, and one can say already now that it will be difficult to stop it. EB must call a special shareholders' meeting to get the capital stock increase approved. As sole owner Investa has full control of Elektro Union, and with 59 percent of the capital stock in EB. EU managing director Oskar A. Munch will be nominated as chairman of the board, while Kjell E. Alsmkog will continue as company president.

Will Become a Flagship

It was Kjell E. Almskog who took the initiative in the takeover of Elektro Union. As a reason he states that EB and EU were the only larger Norwegian-owned companies in their areas.

"But we are small on an international scale. And we wanted to do something about that. The new EB will become a flagship in Norway and abroad. As a starting point EB will have sales of 1.6 billion kroner (25 percent) outside Norway in the form of exports or sales from company-owned production facilities in nine countries outside Norway," Almskog says.

"EB has more than met the expectations which were raised by the purchase, for instance, through improved profits," says Oskar A. Munch. "Now we want to obtain great synergetic effects through the utilization of each other's resources. Incidentally, we informed the industry minister who is very positive towards the fact that we want to get a still stronger Norwegian-owned unit in electrical engineering/electronics."

Investa's entry into EB last year was met with strong resistance from most employee groups. According to managing director Kjell E. Almskog the attitude today is completely different.

"We have motivated employees, and I am pretty sure that the takeover of EU will be considered as another proof that we are on the right track. The measures carried out to improve efficiency which are not complete yet, increased efforts, and better economic results led us to take this initiative," says Almskog who reveals that this year EB will show a profit of between 130 and 160 million kroner, while EU will show a profit of between 90 and 95 million kroner. What EB will finally pay for EU depends on the financial statements at year's end.

Long-Term Efforts

According to Almskog the takeover of EU will improve EB's profit by 30 to 60 million kroner in the takeover year (1987).

"But the takeover is primarily a step in EB's long-term development," he points out. In international competition our resources are too small and the product line is to limited. Internally, we have common business areas where we can make gains through a better structure.

12831
CSO: 3600/2735

TURKEY

BRIEFS

SATELLITE GROUND STATION CONTRACT--Ankara (ANKA)--A contract for the purchase of a TV satellite ground station has been signed between the Turkish Post, Telephone, and Telegraph Administration [PTT] and the U.S. firm AFRTS. The agreement was cosigned for Turkey by Emin Baser, director general of the PTT, and Tunca Toskay, director general of the Turkish Radio and Television Corporation [TRT], and for AFRTS by Jules Kadesh, a representative of the firm. Speaking at the signing ceremony, PTT Secretary General Baser said that as the national transmission could not be received sufficiently well in all parts of Turkey, border areas were under the influence of foreign transmissions. He said: "Use of the satellite facility will allow us to transmit our television wherever we want, with high-quality reception in all parts of the country; it will allow us to increase the number of TV channels and enable their clear reception throughout Turkey." Baser noted that up to six satellite TV channel relays will be possible; he said that programs will be relayed by a main ground station to be established in Ankara to all parts of Turkey and retransmitted locally through small satellite ground stations. Baser added that the system to be established will also create opportunities to provide services via satellite for minerals exploration, for pretremor and scientific research, and for educational and other mass communications. According to an agreement signed by the PTT and the TRT, the construction, maintenance, and repair of the ground receiving stations will be carried out by the PTT, which in the initial phase will acquire 100 ground receiving stations and put them into service in localities required by the TRT. [Text] [Istanbul CUMHURIYET in Turkish 12 Jul 86 p 14] 13184/12859

CSO: 5500/2728

- END -

JPRS-TTP-86-027

14 NOVEMBER 1986

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH, AND DEVELOPMENT

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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DAILY VIEWS PARABOLIC ANTENNA REGULATION

BK151517 Jakarta KOMPAS in Indonesian 9 Oct 86 p 4

[Editorial: "Parabolic Antennas and the Development of the Information Age"]

[Text] A new set of regulations on the use of parabolic antennas for television reception has been laid down through two recent ministerial decrees and two directives from director generals. The regulations basically stipulate that the antennas can be only used to receive television programs from the Palapa satellite. The antenna owners can distribute or relay television programs only from the Indonesian State Television, and a special permit for this purpose must be sought from the directorate general of posts and telecommunications as well as the directorate general of raido, television, and film. It was also stipulated that the parabolic antennas must be produced by domestic factories.

We can make several comments on the new regulations. The first is related to the issue of information and the technology of information dissemination. Strictly speaking, the essence of the new regulations is aimed at reatricting the flow of information and the use of information technology. The flow of information originating from orbiting satellites in the sky is probably viewed as a threat to the political ideology, economy, culture, defense, and security of the Indonesian people. As it is impossible for us to restrict the sources of the information, then the recipients of the information must be restricted. This is analogous to closing people's eyes and ears as it is impossible to ban certain performances.

Such an attitude is tantamount to rejecting reality and obstructing progress.

The age we are now entering has made such rapid progress because of human technological progress. We no longer live in an agrarian society in which our horizon is our village's boundary. In fact, we have begun to move out of the industrial age in which the mass products of various countries have become part of our daily life and we are now entering a new age called the age of information technology. The flow of products from the industrial age can still be curbed by customs officers, but the flow of information is not as easy to control.

Current technological progress is so rapid that it is difficult to catch up, let alone to stop it. According to pundits, national boundaries will very soon be meaningless. The world, now still defined by national boundaries, will soon be converted into a global village. Through the rapid flow of information, what is happening at a certain spot in the world will be known at another spot almost at the same time.

Technological progress will also render all efforts to obstruct the flow of information futile, or at least more expensive.

A parabolic antenna is a good example. Several years ago, an antenna with a diameter larger than 10 meters was needed to receive signals transmitted by satellite. Three years ago, a 4-meter antenna could do the same job. Right now, a 3.5-meter antenna gets good reception.

Let us assume that we want the public to receive only television programs carried by Palapa satellite, which can be done with a 1.5-meter antenna. To receive transmissions from Intelsat, people need a larger antenna.

However, we can never be sure that in the near future technological progress will not make it possible to produce 1.5-meter antennas more powerful and versatile than the current ones. Besides, if the direct broadcasting system [three preceding words in English] satellites, which have stronger signals than our Palapa satellite, are put into orbit in the near future, the restriction on the size of the antenna will certainly be meaningless. This does not take into account the ingenuity of Indonesian electronic engineers, who can develop various ways to intercept satellite transmission signals.

Enforcing the regulations in great detail will also be problematic. It will be difficult to know which antennas are being directed at the Palapa or non-Palapa satellites. If there are only 100 or 200 antennas in a certain area, supervising them will probably be easy. However, we must remember our archipelagic nation consists of some 13,000 islands covering some 920,000 square kilometers of territory. Nobody can imagine how the government will effectively supervise such a vast area with thousands of parabolic antennas on it. Neither can one imagine how much money the government will spend on the task.

There are plenty of examples on technological progress being able to bypass restrictions on the flow of information. Whenever a foreign publication carries an article considered unsuitable for domestic consumption and subsequently has its pages blackened with ink, photocopies of such articles will very soon be circulating among the public.

Several considerations mentioned earlier will probably make us review any new regulations aimed at restricting the flow of information and technology.

The best way to cope with the greater flow of information in our world is probably through educating our people so they can distinguish the information that is beneficial or destructive to them. We still do not know whether all incoming information is bad and destructive. Perhaps there is more useful information than destructive.

Do we really have to close our eyes and ears to block the entry of all kinds of information, including the good and useful?

/12232
CSO: 5500/4302

NEW REGULATIONS ON PARABOLIC ANTENNAE EXPLAINED

BK151256 Jakarta THE JAKARTA POST in English 8 Oct 86 p 1

[Text] Jakarta (JP)--Individual parabolic antennae owners have to register their receivers with the Directorate of Radio, TV and Film (RTF directorate) within 3 months.

RTF Director General Subrata and Director General Post and Telecommunications Adbulrachman conveyed Tuesday the government's decision on the usage of parabolic antennae by individuals, distributors and closed circuit users.

Individuals who would like to use parabolic antennae for specified areas (distributors) have to obtain permission from the Directorate General of Post and Telecommunications after getting approval from the Information Ministry.

"Applicants for distributors should be legal entities and parabolic antennae used for this purpose should be locally made," Abdulrachman said.

TVRI [Indonesian State Television] now has 9 broadcasting stations with 205 relaying stations serving some 110 out of 160 million population.

"We are thinking of the blank spot areas," Subrata said. "Hopefully, there will be people in these areas who can afford to buy the parabolic antennae."

The government's decision ended uncertainties about the usage of parabolic antennae which began pouring [into] the country about 4 years ago.

Special users who have closed circuit systems such as hotels will have to obtain permission from the Information Ministry and RTF directorate.

"Hotels are facilities closely related to tourism in this country. In principle, we agree to their usage of the antennae. Subsequent regulations will be issued by the RTF directorate general," Abdulrachman said.

The regulations, comprising four decrees from the Information Ministry and the directorate general for post and telecommunications, prohibit the usage of import parabolic antennae for distributors.

"Locally made antennae have been fixed to beam Palapa satellite signals only. Distributors are not allowed to relay programs other than those of TVRI. Neither are they allowed to relay commercial video programs," Abdulrachman said.

Individual owners are not allowed to relay other satellite signals except the Palapa satellite. "Since the Palapa satellite also relays programs from Thailand and Malaysia, individual owners can enjoy these programs. But of course, there are special fees for this of which the amount is still under discussion," Subrata said.

He added that the government's appeal to individual owners to stick to Palapa satellites is based on a moral obligation. "We are aware that other satellites may monitor programs which are not always compatible with our ideologies."

The registration deadline for individual owners will be on 11 December. After this date, there will be no more imports of parabolic antennae. Abdulrachman also expressed the hope that the companies taking part in future communications exhibitions will display only those antennae having the capacity specified by the government's regulation.

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CSO: 5500/4302

MINISTRY OFFICIAL ON COMMUNICATIONS PLANS

HK030321 Hong Kong SOUTH CHINA MORNING POST in English 3 Oct 86 BUSINESS POST p 2

[By Olivia Sin]

[Text] China's one billion people are served by only 6.3 million telephones.

Although Beijing leaders have designed telecommunications as a priority development area, the shortage of telephone sets is unlikely to be solved in this century.

According to the vice-director of the Technical Information Center of the Chinese Ministry of Posts and Telecommunications, Mr Xue Chunpei, the country plans to increase the total number of telephone sets to 10 million by 1990. The figure will rise to 33.6 million sets by the year 2000, which will still be far from satisfying the needs of the ordinary public.

Mr Hue is a member of a high-level Chinese delegation now in Hong Kong to promote a telecommunication exposition to be held in Beijing in April.

Few households in China have telephones, considered a general necessity in more developed countries. It is, therefore, not surprising to find a Chinese village of hundreds of households sharing one telephone.

Comparatively speaking, the communications network is better developed in the major cities like Beijing, Shanghai, Guangzhou and Tianjin.

Mr Xue admitted that the development of telecommunications in the rural areas lags far behind the big cities. It is understood that less than one-third of the 6.3 million telephone sets are in rural areas. Nevertheless, he said to satisfy the needs of big cities, most of the extra 3.7 million telephone sets to be installed in the next five years will be in the coastal regions.

Apart from telephone sets, he said China will need more than 500,000 digital exchange lines in the next few years.

Sophisticated equipment like microwave stations, optical fibre links and satellite communication ground stations will also be needed.

Mr Xue said China is interested in forming joint ventures with foreign companies to develop advanced telecommunications equipment and techniques. Among them are digital microwave system, optical fibre communication equipment and postal sorting technology.

In addition, he said China is speeding up the development of longer distance communication links aimed at bridging the gap between the North and South.

For instance, he said large capacity digital microwave trunks will be built to facilitate communications between Beijing and Shanghai. Long wave optical fiber trunks will be built to link up the major cities of Wuhan, Chongqing and Nanjing.

Mr Xue said a number of postal centers will be set up in provincial capitals to speed up mail services.

Another member of the delegation, Mr Luo Kang, said China will import advanced electronic components and technology to enhance its development in the industry, science and defence sectors.

Examples are radars, electronic warfare equipment and precision measuring instruments, he said.

/12913
CSO: 5500/4131

PRC PLANS TO UPGRADE COMMUNICATIONS TECHNOLOGY

OW021932 Beijing XINHUA in English 1518 GMT 2 Oct 86

[Text] Hong Kong, 2 October (XINHUA)--China is interested in importing advanced posts and telecommunications technologies and facilities, a Chinese official said here today.

These include optical fiber communications and digital multiplex equipment, telecommunication instruments, and technology for producing telephone sets and postal sorting facilities.

Speaking at a press conference here today, Xue Chunpei from the Chinese Ministry of Posts and Telecommunications said that China's rural areas, where more than 80 percent of China's population live, is a "vast market" for such equipment.

At present, less than one-third of China's telephones are installed in the countryside, he said.

According to China's Seventh 5-Year Plan (1986-90), the total number of telephones should reach up to 10 million by 1990, and one-third of the new lines will link villages.

Xue said that along with rural economic development, a growing number of peasants wants to install telephones.

China expects to have 33 million lines of telephone at the turn of the century, more than 5 times the current total. Even then, there will be only 2.8 telephones for an average of 100 people, still falling far behind the world standards, he added.

Xue is a member of a delegation which has just ended a tour to Britain, France, Federal Germany and Italy.

/12232
CSO: 5500/4134

ZHU GAOFENG SPEAKS TO MARK WORLD POST DAY

OW090109 Beijing XINHUA in English 1440 GMT 8 Oct 86

[Text] Beijing, 8 October (XINHUA)--China will greatly promote its development of posts and telecommunications and expand its postal relations with other countries, Vice-Minister of Posts and Telecommunications Zhu Gaofeng said here today.

Zhu was speaking at a gathering held this afternoon to mark world post day.

He noted that since this year is the international peace year designated by the United Nations, it is fitting that the Universal Postal Union has decided that the theme of this year's world post day is "The post is the messenger of peace."

Since the founding of New China in 1949, Zhu pointed out, great progress has been scored in China's posts and telecommunications.

Now there are more than 300,000 postal workers in China working in over 53,000 post offices. In 1949, however, there were only some 4,800 post offices, 100,000 postal workers with a postal coverage of less than 12,000 km. The postal route has extended to more than 4 million km.

Compared with 1949, post offices in China handled in 1985 36.8 times more letters, 26.5 times more parcels and 35.5 times more money order, and distributed 58 times more newspapers and magazines, Zhu said.

So far, the country has established direct postal relations with more than 110 countries and regions, with more than 100 million letters and parcels handled each year.

He said posts and telecommunications departments should take advantage of the country's economic reform and improve the postal service so as to better serve socialist construction.

Liu Gengyin, vice-president of the Chinese People's Association for Friendship with Foreign Countries, also spoke at the meeting.

A letter from Botto de Balaus, director-general of the International Bureau of the Universal Postal Union, was read out at the meeting.

Zhu Xuefan, vice-chairman of the National People's Congress Standing Committee, was present at the meeting.

To mark the occasion, the Ministry of Posts and Telecommunications will issue tomorrow a philatelic-numismatic cover and the Beijing Philatelic Association will hold an exhibition at the Chinese Art Gallery on the subject of the international peace year from 9-16 October.

/12232
CSO: 5500/4134

BEIJING APPROVES SINO-JAPANESE OPTIC VENTURE

Hong Kong BUSINESS STANDARD in English 20 Sep 86 p 1

[Article by Tony Ngan]

[Text] **A ONE-billion-yen joint venture between a long-established Japanese manufacturer and a unit under China's Ministry of Machinery Industry has been granted a business licence by the Chinese government to make hi-tech optic fibres.**

The joint venture was disclosed in this week's issue of *China Business Intelligence*, published jointly by CITIC (China International Trust and Investment Corporation), *Bridge* magazine in China, and the Almanac of China's Economy in Hongkong.

Known as the Shianfu Optical Fiber & Cable Co, the venture is 50% owned by Furukawa Electric Co — an electric wire non-ferrous metal manufacturer with a 102-year history — whose products include mining equipment, generators and batteries.

The Chinese partner in the new company is the Xian Electric Cable Works, a subsidiary of the Xian Electric Power Machinery Manufacturing Company, which is directly under China's Ministry of Machinery Industry of China.

Xian Electric Cable Works is a plant specialising in producing electric communication cables. It has been studying, developing and making some optical fibres and cables.

Furukawa Electric has been developing optic fibres and cables since the early 1970s and is said to be among the world's major optic fibre cable producers — enjoying good relations with a leading maker in the field, the American Corning Glass Corp.

Furukawa co-operates with other Japanese manufacturers in the technical study and development of optic fibres, but also reported considerable achievement of its own in such technology.

Shianfu has been projected to produce 20,000 kilometres of high-quality optical fibre each year, which is made into about 2,000 kilometres of cables of various specifications.

Construction of Shianfu's optic fibre cable factory is expected to be completed in the latter part of 1987. The plant will be manned by a staff of about 320.

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CSO: 5550/0010

VICE MINISTER DISCUSSES COMMERCIAL SATELLITE LAUNCHING

HK061120 Hong Kong AFP in English 1114 GMT 6 Jun 86

[Text] Beijing, 6 June (AFP)--China hopes to carry out its first commercial satellite launch for a foreign country by the end of next year, Aeronautics Vice-Minister Sun Jiadong said Friday.

He said that the launch price would be 10 to 15 percent lower than the average international price, and that the people's Insurance Company of China (PICC) would offer below-market insurance rates for launches.

Recent problems in the U.S. and European space programs have fueled interest in China's entry into the international launch market, analysts said.

The Aeronautics Ministry's commercial branch, Great Wall, has already signed letters of intent with the Swedish space program and with a private U.S. firm, Teresat, since offering its two-stage Long March II and three-stage Long March III launch vehicles to foreign users last autumn, Mr Sun said.

The Swedish satellite would not be ready for launch for 2 or 3 years, but some U.S. firms might launch earlier since the satellites were already completed, he said.

"It all depends on how the talks go," he said, adding that he expected China's first foreign satellite launch to take place by the end of 1987.

Chinese officials say there have been expressions of interest in its launch program from companies in Britain, Belgium, Thailand, Australia, and Canada, as well as agents acting as brokers for Indonesia.

Asked about problems in the U.S. and Europeans programs, Mr Sun said both operated at a high technical level and he was confident they would recover quickly from their temporary setbacks.

Meanwhile, PICC Vice-President Cheng Wanzhu told reporters that the company would seek re-insurance abroad and would make up the difference between international rates and the lower rates it would charge foreign clients.

PICC would, he said, naturally want information on the foreign satellites it was insuring. "If people are concerned about this they can seek insurance elsewhere," Mr Sun said.

Under their letter of intent, Teresat aims to have China launch a Palaba-B communications satellite which was retrieved from a faulty orbit along with another communications satellite by a U.S. space shuttle in 1984.

Western technical experts said publicity from the singing of a letter of intent last month was intended to help Teresat raise funds to purchase the satellite from an insurance consortium that now owns it.

Despite China's low prices, lack of financing by Teresat and U.S. Government constraints on the transfer of sensitive satellite technology may still block the launch, the experts said.

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CSO: 5500/4134

PEOPLE'S REPUBLIC OF CHINA

DEVELOPMENT OF SATELLITE TELEVISION DISCUSSED

Beijing DIANZI SHIJIE [ELECTRONIC WORLD] in Chinese No 6, 15 Jun 86 pp 2-4

[Article by Chen Kejun [7115 0668 6511]: "The Development of Satellite Television Broadcasting in China"]

[Text] In May 1985, the State Council Office of the Leading Small Group for the Promotion of Electronics decided that we would use a C-band hemispheric beam transmitter in the leased international communications satellite V to broadcast the first television programs from the Central Broadcasting Station. This would be a transition plan for satellite broadcasting in this country, by which we will progressively develop satellite broadcast television. Within the past year, this work has made new progress.

The Characteristics and Function of Satellite Communications and Broadcast Television

Satellite communications and broadcast television is a way in which radio signals are transmitted by satellite. Synchronous satellites are generally satellites positioned over the equator at about 36,000 km. Their operational speed (angular velocity) is the same as the rotation of the earth, and therefore the satellite and surface of the earth are relatively static, for which reason these satellites are called synchronous (or static) satellites.

Satellite communications and broadcast television are characterized by a broad area of coverage, where a single satellite can cover our entire territory and territorial waters, even as much as one-third of the earth's surface; communications and broadcast television are not restricted by distance, terrain, nor geographical conditions; channels are stable, high in quality, and work in all weather; there is great capacity for communications and broadcast television, and various services such as telephone, telegraph, data, facsimile, and video can all exist together, and many sets of broadcast television programs may be transmitted.

China has a vast territory, complex terrain, is mountainous over 70 percent of our territory, and has many islands, mines, and forested areas. When we received programs from Central Broadcasting in the past, for areas other than the Beijing area the programs were first transmitted to medium and large cities by microwave circuits and then relayed through television towers or differential relays for reception by subscribers. At present, the length of microwave circuits is limited, the coverage rate is very low, many areas cannot directly receive television programs from Central Broadcasting in real time, and communications are quite difficult. At the same time, as microwave circuits increase in distance, the video and signal quality are difficult to preserve. Microwave circuits are expensive, and some areas are difficult to connect. So, developing broadcast satellites and ground stations is an economical and effective technical means by which to resolve coverage for this country's communications and broadcast television.

The Situation Regarding Construction of Satellite Groundstations in China

Exploratory work in China's use of satellites for communications and broadcasting began in the early 1970's. Projects during the first period were of an experimental and trial nature. In 1978 the Nanjing groundstation, earliest constructed (using analog equipment), and the Shijiazhuang groundstation (built for digital equipment) used the French-West German symphonic satellite, and in 1982 used the international communications satellite models IV-A and V to successfully carry out satellite communications experiments. On 8 April 1984, our first launch of and experiments with a synchronous communications satellite marked the entry into a new stage for satellite communications and broadcast television technology in this country. It used a 6/4 gigahertz bandwidth, two relays on the satellite, and six transceiving satellite groundstations in Beijing, Shijiazhuang, Nanjing, Urumqi, and Lhasa to form the first satellite communications network and broadcast television system in China. The transmitters on these satellites used spherical beaming, from which the equivalent omnidirectional radiating power was only some 20 db/watt, and the groundstations had to use 10, 13, and 15 meter diameter antennas before they could get television video quality of levels 3.5 to 4. Beginning 1 November 1985, China officially leased a hemispheric beam C-band transmitter on the international communications satellite V at 66 degrees east longitude, with an equivalent omnidirectional radiating power of about 30 db/watt. The first Central Broadcasting programs broadcast with this throughout the country were presented in the early part of October 1985 to the old base areas, minority regions, and the frontiers by 53 satellite television groundstations constructed by the State Council throughout the world with antennas of diameters from 6 to 7.5 meters, and where video quality was of a grade 3.5 to 4. Twentythree groundstations built by the Ministry of Electronics are distributed throughout the cold, plateau, and frontier regions of the country. Before the New Year's holiday in 1986, another more than 120 groundstations for satellite television reception were built throughout the country having antennas of 6 to 7.5 meter diameter. Based on current orders for equipment, the Ministry of Electronics will have built more than 1,000 groundstations with 6 to 7.5 meter antennas by the end of this year. On 1 February 1986, the functional communications and broadcast synchronous satellite that we launched was set at a position of 103 degrees east longitude. It was fitted with a domestically produced parabolic beam antenna, which allows the satellite radiating power to be basically concentrated within our territory. Therefore, the intensity of the signal has been clearly improved, and the equivalent omnidirectional radiating power can reach about 34 db/watt. The television quality received on the ground has been visibly improved throughout all areas of the country. Equivalent omnidirectional radiating power is strongest for the Chengdu, Sichuan area, at the heart of the beam path. With the Chengdu, Sichuan area at the center, it goes east to Shanghai, west to Lhasa, north to Hohhot, and south to Nanning. This is an area approximately 40 percent of our vast territory, within which groundstations equipped with 4.5 meter diameter antennas have a video quality from level 3.5 to 4. In the northeast of our country, the northwest of Xinjiang, the west of Tibet, and the coastal islands of Hainan and Taiwan, with groundstations having 6 meter diameter antennas video quality can be at level 3.5 to 4. This year we have also decided to buy two hemispheric beam C-band relays on the international communications satellite V at 66 degrees east longitude, and satellite television teaching programs will begin from 11 July this year, with programs having economic information beginning at year's end. Satellite television teaching will be disseminated to the county level during the first 3 years of the Seventh 5-Year Plan, going to the township level during the last 2 years. This will present a regenerative prospect for the development of satellite television reception stations and transmitting differential relay stations in this country. The opening up of functional communications and broadcast television satellites in this country will also give great impetus to ground reception stations with antennas of 4.5 meters diameter. During the Seventh 5-Year Plan, this country will itself develop broadcast television satellites with many relays onboard to retransmit many sets of television programs.

For several years now, the Ministry of Electronics has produced more than 50 medium to large satellite groundstations with antennas in diameters of 10, 13, 15, 20, and 25 meters and antenna feed servo-trace systems for research in the areas of military use, weather, astronomy, intelligence, teaching, and science research; they have researched and produced more than 150 small satellite television ground reception stations having 2 to 3 meter antennas for the L and K bands (digital sound accompaniment). We are now cooperating with the United States and Canada in small scale broadcast television groundstations with from 1 to 3 meter diameter antennas for sale in the international market. We are also cooperating with Canada in technology to develop and manufacture a new generation satellite ground system with multi-use frequencies and low secondary lobes.

The Composition of Satellite Broadcast Television Transmission Systems

Satellite broadcast television transmission systems include uploading transmitter stations and measuring and control stations, the satellite, ground receiving station networks, and the broadcast system, as well as the program creation system. A diagram is shown in figure 1.

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                                  -----------
                                 | satellite |
                                  -----------

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| sat. measurement  |
| & control station |
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 -------     ----------     --------    -------     --------     ------------
|   TV  |-->| TV trans-|-->| TV     |  | TV re-|-->|program |-->| radiating  |
| center|   |  mission | | | upload |  |ceiving| | |creation|   |differential|
|       |   |          |   |station |  |station|   |system  |   |relay statn.|
 -------     ----------  |  --------    -------  |  --------     ------------
                                         |               |
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                               ---------------        ---------------
                         |    |monitor devices|  |   |monitor devices|
                               ---------------        ---------------
                         |                       |
                          <-- satellite links -->
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Figure 1

The main task for the upload station is to transmit the programs from the broadcast television center to the relay on the broadcast satellite, and at the same time to receive the broadcast television programs relayed by the satellite for monitoring devices.

Measurement and control stations are to allow the satellite to operate normally on track, to complete the assigned tasking, and whenever necessary to control the position and working state of the satellite in its orbit. When needed, they can provide the satellite with certain instruction signals for remote control and telemetry, as for example to turn on and off the relay, to switch to reserve systems on the satellite, and to regulate the positioning of the satellite.

The ground receiving station network is composed of various ground receiving stations, which in view of current actual conditions in this country are primarily to develop collective reception. The size of the antenna diameter at the receiving stations is determined by the satellite equivalent omnidirectional radiating power and the demands for video quality, which are selected by the user (see table 1).

Table 1 Ground Receiving Station Antenna Diameter

Satellite Equivalent Omnidirectional Radiating Power (db/watt)	Level 3.5 Video Image Quality (for viewing)	Level 4 Video Image Quality (for re-transmission)
30	6 meters	8 meters
33	4.3	6
36	3	4.3
38	2.4	3.4

Collective reception is the retransmission to display equipment, such as large screen projection television sets and multiple unit TV sets through cable television (including public antennas and closed circuit television), the television programs received by the receiving stations. These are for collective reception by organizations, schools, military units, and mines and factories and for viewing by individuals and families in high rise complexes. The connections between satellite television reception and the cable television system is shown in figure 2.

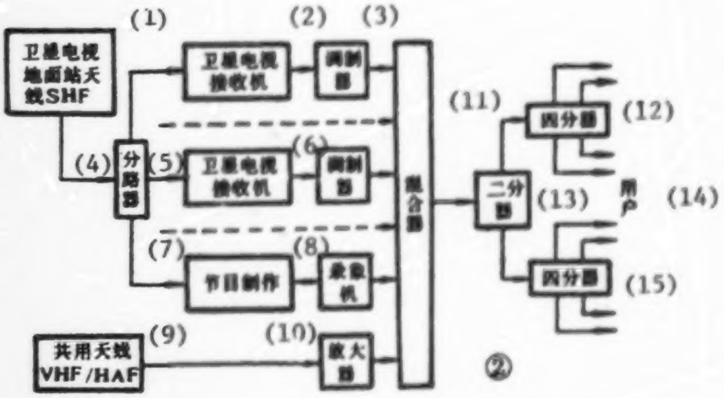

Figure 2. Key:

(1) satellite television ground station antenna SHF
(2) satellite television receiver
(3) modulator
(4) shunt
(5) satellite television receiver
(6) modulator
(7) program creation
(8) video taping equipment
(9) public antenna VHF/HAF
(10) amplifier
(11) mixer
(12) four-way divider
(13) two-way divider
(14) user
(15) four-way divider

The retransmission system is television programs received by the satellite television ground stations that are then transmitted after reworking, or are directly broadcast in real time after middle frequency modulation or are retransmitted differentially for direct viewing by subscribers. See table 2 for estimates regarding the power of relay transmitters (or differential relays) in the plateau region, the altitude of transmission towers, and areas of coverage.

From the end of the 1960's to the present, the Ministry of Electronics has formed designs and production capacities for a comprehensive satellite ground station and accompanying equipment, it has fostered a quality technical contingent, and has gathered them together into research institutes and factories with great technical capacity and advanced techniques. It has serialized batch production of C-band satellite television ground station reception stations and accompanying equipment, and can as well train technical personnel and provide various technical services that are effective and convenient. At the same time, it can also take on the responsibility for design and production for the international market of various kinds and sizes of satellite communications, broadcast television reception stations, and antenna systems in the L-band, C-band, S-band, and K-band. It is certain to make even greater contributions to the development of domestic and foreign communications and broadcast television.

Table 2 Estimates Regarding Areas of Coverage for Retransmission Transmitters

transmitter power (watts)	transmitter tower height (meters)	transmitting antenna gain coefficient	perimeter field strength (microvolt/meter)	VHF coverage radius (kilometers)	UHF coverage radius (kilomtr)
3	10	3	4,500	1 ~ 2	3 ~ 4
10	10	3	4,500	1.5 ~ 3	4.5 ~ 6
50	30~50	3	750	4 ~ 8	12 ~ 16
100	30~50	3	750	5 ~ 10	15 ~ 20
1,000	100	6	4,500	20 ~ 40	40 ~ 50
5,000	180	6	4,500	25 ~ 50	/
10,000	180	6	4,500	30 ~ 60	/

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CSO: 5500/4165

GROUND STATION PROCESSES SATELLITE SURVEY DATA

OW241226 Beijing XINHUA in English 1207 GMT 24 Sep 86

[Text] Beijing, 24 September (XINHUA)--China has built a remote ground station to process data concerning China's land resources transmitted by satellites launched by France and the United States, a leading scientist said today.

Zhang Libing, vice-director of the Space Science and Technology Center of the Chinese Academy of Sciences, told XINHUA the station is one of the four most advanced in the world. "It will help the people of China learn more about the earth from the vantage point of outer space," he said.

Located in Miyun County on the northeastern outskirts of Beijing, the station--a cooperative project of China and the United States--began trial operations in May and has provided Chinese scientists with more than 400 satellite pictures.

When it begins full service in November, the ten million U.S. dollar facility will provide Chinese and foreign clients with remote sensing data, satellite pictures and other services.

Senior leader Deng Xiaoping completed arrangements for the cooperative venture when he visited the United States in 1979. In December 1985, Chinese officials contracted with a private French firm, the Spot Image Corporation, to use its satellite's data. The Chinese Ministry of Astronautics has said it will launch its own land survey satellite by 1990.

The French satellite is sending data from 832 kilometers above the earth, while the U.S. satellite is positioned at an altitude of 705 kilometers. Both satellites cross the equator daily, enabling the station at any moment to receive data about an area 4,800 kilometers in diameter.

Altogether, the station can analyze information covering some 80 percent of China's total land mass of 9.6 million square kilometers--including nearly all of the country aside from some parts of Tibet and the Xinjiang Uygur Autonomous region.

To solve that problem, Zhang said, the Academy of Sciences is planning to build a second ground station in Urumqi, capital of Xinjiang.

In its trial operations, the station has provided the Shengli offshore oil field in northeast China with satellite pictures enabling it to develop a plan for economical drilling on land.

Zhang said data from the satellites will enable scientists to monitor floods as well as more effectively assess plans for public works. In addition, he said, the data will be useful in such fields as agriculture, forestry, marine engineering, city planning, and geology.

For example, he said, officials have already asked to use satellite data for surveys of uranium and other mineral resources.

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CSO: 5500/4131

RESOURCE SATELLITE LAUNCHED FROM JIUQUAN

HK120152 Hong Kong ZHONGGUO XINWEN SHE in Chinese 0847 GMT 11 Oct 86

["China Launches a Second Satellite for Surveying Terrestrial Resources"--ZHONGGUO XINWEN SHE headline]

[Text] Beijing, 11 October (ZHONGGUO XINWEN SHE)--After flying for five days in space, China's second satellite for surveying terrestrial resources returned to earth at 1220 today as scheduled.

The satellite was launched from the Jiuquan launch site in western China at 1340 on 6 October and was orbited as scheduled. The satellite's perigee was 180 km from earth and its apogee 400 km away. The satellite's orbit and the equatorial plane subtended an angle of 57 degrees. Each orbiting period was 90 minutes. During the five day flight, all parts and components of the satellite worked properly and the satellite collected much technical information that can be used in a general resources survey.

This satellite was the 19th satellite launched by China so far. However, it is the eighth retrievable satellite.

The satellite was launched from a "Long March 2" rocket, which has a length of 31 meters, a diameter of 3.35 meters, and a takeoff weight of 92 tons. This rocket is capable of putting a 2.4 ton satellite into orbit. Of the 19 satellites launched by China, 16 were launched from the Jiuquan launch site.

It is reported that the information collected by this satellite can be used in a survey of terrestrial resources, prospecting for mineral resources, water conservancy, environmental protection, and oceanographical and seismological research. As it did for the satellite launched in October last year for surveying terrestrial resources, the China Insurance Company also provided insurance service for the launching and retrieval of this satellite.

People in the field of astronautics told reporters that China has many times successfully launched different types of satellites with "Long March" rockets. This shows that China's carrier rockers are very reliable and that China has the capabilities to undertake satellite-launching business.

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CSO: 5500/4132

GUANGDONG OPENS CONFERENCE ON RADIO, TELEVISION

HK250747 Guangzhou Guangdong Provincial Service in Mandarin 0300 GMT 25 Aug 86

[Text] Our station reporter has learned from the Ninth Provincial Conference on Radio and Television Work which opened this morning that radio and television have developed rapidly in Guangdong in recent years. The proportion of the population now covered by wireless broadcasting and television is respectively 70 percent and 80 percent.

Since the previous conference on this topic in 1983, Guangdong has achieved gratifying success in radio and television work. The provincial broadcasting station now runs 6 channels for a total of 83 hours a day. The provincial television station runs 2 channels and also relays 1 channel of the central television CH station, for a total daily output of 34 hours. The province has also built 5 medium-wave stations, 29 city and county television stations, and 711 television transmitting and relay stations. Thirty-four of the 50 counties and cities allowed by the higher authorities to establish FM radio stations have now done so. Kaiping County was the first in the whole country to set up a television station and stereo FM radio station. Each county also has a wired broadcasting station. A radio and television propaganda network covers the urban and rural areas, contributing to the building of the two civilizations in the province.

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CSO: 5500/413

HUBEI HOLDS RURAL BROADCASTING WORK CONFERENCE

HK230624 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 22 Sep 86

[Excerpts] Between 11 and 16 September, the province held the rural broadcasting work conference in Hefeng County. In connection with the spirit of the provincial government's instructions on rural wired broadcasting, the conference discussion particularly emphasized the building of, and propaganda work through, rural wired broadcasting.

Broadcast and television bureaus of Hefeng, Xianfeng, Tianmen and Yunxi counties and city briefed the conference on their experiences in developing rural wired broadcasting, producing their own programs, reforming their administration, and perfecting their broadcasting services.

In the course of meeting, Liang Shufen, vice governor, and Zhang Peng, deputy director of the provincial party committee made speeches. Zhang Jinxian, head of the provincial Broadcast and Television Department, delivered a work report.

In her speech Liang Shufen stressed: party and government at all levels must increase their understanding of the significance and roles of wired broadcasting. When developing broadcasting and television, we must emphasize the coordinated development of wired broadcasts and wireless broadcasts, radio and television. We must not only emphasize television but neglect broadcasting, or emphasize wireless broadcasting but neglect wired broadcasting. At present, the province has done poorly in wired broadcasting. Governments at all levels must make great efforts in this area. During the Seventh 5-Year Plan period, we should establish wired broadcasting stations at every township and greatly increase the number of speakers installed. This is an arduous task. Governments at all levels must further strengthen their leadership over the work of broadcasting and television. The capital investment in, and funds for running broadcasting and television should be included in their local capital construction projects and budgets. In addition, considering economic development and practical needs, they should increase the investment accordingly. The establishment of district and town broadcasting stations and setting up the stations should be put on their agenda. Financial, tax as well as industrial and commercial administrative departments should support the broadcast and television departments in running their service departments and other paid services properly, so that the broadcasting and television departments can use the revenue to make up for the insufficient operating funds. Broadcasting and television departments at all levels must uphold reforms, strengthen their administration, and perfect their services. They should expand the coverage of central and provincial broadcasting and television programs, so that the masses can receive better program signals.

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CSO: 5500/4133

SHAANXI RADIO NOTES NEGLECT OF RURAL WIRED BROADCASTING

HK240341 Xian Shaanxi Provincial Service in Mandarin 0030 GMT 24 Sep 86

[Short commentary: "Work Creatively to Consolidate and Develop Wired Broadcasting"]

[Text] In recent years, as a result of the increasingly extensive use of television sets, recorders, and receivers in the rural areas, some places have slackened management and development of rural wired broadcasting. This is a trend that should attract attention.

The information provided at the recent provincial forum on rural wired broadcasting, held in Qishan County, shows that wired broadcasting can still exist for a long time in the rural areas after wireless broadcasting and television have developed. At present and for a long time to come, wired broadcasting remains an effective tool for the county and township leadership organs to publicize policies and direct production. It is a bridge closely linking the cadres with the masses. Trends of neglecting wired broadcasting should therefore be promptly corrected. We must attach importance to consolidating and developing wired broadcasting in the rural areas.

Of course, wired broadcasting must continually introduce new technology, to create conditions for its own consolidation and development. The method applied by the broadcasting systems of Weinan and Meixian Counties in having the wired broadcasting stations serve a variety of purposes makes full and effective use of the broadcasting wires. Still more use of this creative method will help to speed up the development of wired broadcasting. We hope the comrades in the broadcasting system will engage in such creative work.

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CSO: 5500/4133

BRIEFS

RADIO STATION INSPECTION--At 1600 on 14 September, Governor Gu Xiulian and Vice Governor Yang Yongyi inspected the shortwave transmitter of the Voice of (Jinning) Radio Station, newly completed and to be put into operation soon. Governor Gu Xiulian heard a report by a responsible person of the radio station on the design and construction of the transmitter; installation and trial run of equipment; and the station's preparations for broadcasts. Governor Gu Xiulian expressed satisfaction over the work of the radio station. She said: We should have a long-term plan for our radio and television work and should set out goals for the Seventh and Eighth 5-Year Plans and by the year 2,000. In addition, all equipment and facilities should be modernized according to domestic or international standards. Governor Gu Xiulian also expressed satisfaction with the Jiangsu Provincial People's Radio Station broadcasts to Taiwan. She said: I often listen to the broadcast at 2300. The programs are quite good, and (Hai Ti) and others have done good broadcasting work. The two leaders then toured the transmitter building and went to the terrace atop the fourth floor to get a panoramic view of the transmitter towers and the surrounding countryside. Governor Gu Xiulian called on comrades of the station to pay attention to greening the surroundings and to environmental sanitation; she urged them to build the station into a garden. [Text] [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 15 Sep 86 OW] /12913

SHANDONG SATELLITE GROUND STATION--A satellite television ground reception station for entertainment and educational uses has been built and made available recently in Binzhou City, Shandong Province. With one antenna, this station can receive the first program and the educational program of the Central Television Station simultaneously. Thus far, these two programs have been welcomed by the masses here. [Summary] [Jinan Shandong Provincial Service in Mandarin 2200 GMT 3 Sep 86 SK] /12913

RADIO, TV GROUND RECEIVER--Zhejiang Province's largest ground station for receiving radio and television signals transmitted by satellites was completed in Zhoushan areas on 8 September. Henceforth, people in the Zhoushan archipelagoes can directly receive six televised programs transmitted by the Central Television Station and the Zhejiang Television Station. [Text] [Beijing Domestic Service in Mandarin 1000 GMT 9 Sep 86 OW] /12913

DAQING SATELLITE STATION--Harbin, 17 September (XINHUA)--Daqing oilfield has completed construction of a multifunctional ground satellite station, which can relay and receive telephone and television signals and computer data through international telecommunications satellites positioned above the Pacific Ocean. With its debugging completed, the ground station will soon be merged with the special satellite telecommunication network of the Ministry of Petroleum Industry, thereby modernizing Daqing oilfield's means of telecommunications. [Text] [Beijing XINHUA Domestic Service in Chinese 0016 GMT 17 Sep 86 OW] /12913

SICHUAN'S SATELLITE GROUND STATIONS--Chengdu, 18 September (XINHUA)--Up to now, Sichuan's Aba Zang Autonomous Prefecture has already built eight TV satellite ground stations. Last year, the State Council gave Aba Prefecture a set of TV satellite ground receiving equipment. After the equipment was put into operation, TV reception has been improved. Therefore, 10 of the 13 counties of the prefecture planned to build ground stations. Seven counties such as Hongyuan, Aba, and Nanping completed construction this year. Programs of the Central TV Station received by these ground stations are clear in picture, bright in color, and loud in sound. [Excerpts] [Beijing XINHUA Domestic Service in Chinese 0002 GMT 18 Sep 86 OW] /12913

SATELLITE GROUND STATION--Xinjiang has made rapid progress in its communication means. The Urumqi domestic satellite ground station, which was undertaken by the postal and telecommunications departments, officially started its operation on 8 July. From now on, Xinjiang has the advanced communication equipment of the 1980's. Since its operation, the satellite communication was first used in telephone communication and television broadcast. Now four telephone lines from Urumqi to Beijing and five from Beijing to Urumqi are routed through the satellite. According to Statistics, in August, 1,593 telephone calls were made through the four lines from Urumqi to Beijing, accounting for 16.31 of total telephone calls from Urumqi to Beijing during the month. The volume is better than that of wire telephone lines. This has eased the strained situation in long distance telephone calls to Beijing. [Excerpt] [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 29 Sep 86 HK] /12913

NEI MONGGOL TELECOMMUNICATIONS GAINS--Since the liberation of the PRC, Nei Monggol Autonomous Region has scored marked achievements in developing post and telecommunications networks. The region has shown a 14-fold increase in the length of postal routes and a 13-fold increase in the number of postal and telecommunication offices. To date, all sumus [towns] in the region have been connected with the postal routes and 93.8 percent of sumus have installed their telephone systems. Urban telephone ownership in the region has increased from 0.28 units per 100 persons to 1.47 units. At present, the region is vigorously building modern communications equipment. [Excerpt] [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 3 Oct 86 SK] /12913

MICRO-COMPUTER TRACKING SYSTEM--Urumqi, 9 September (XINHUA)--A micro-computer antenna automatic tracking system successfully developed by the Xinjiang Military Region's ground satellite communications station will solve the problem of deviation in satellite tracking. This new system will improve the automation and accuracy of tracking and will lower the cost by percent. [Excerpts] [Beijing XINHUA Domestic Service in Chinese 0105 GMT 9 Sep 86 OW] /12232

OPTICAL FIBER DEVICE--Shanghai recently developed a multiple channel transmission device using optical fiber. The device is capable of simultaneously transmitting three radio signals with only one piece of optical fiber. It can be either used solely for transmission of radio signals or for transmission of FM stereo signals. The development of this device opens a wide vista for utilization of optical fiber technology in radio broadcasting. [Summary] [Shanghai City Service in Mandarin 1000 GMT 23 Jul 86 OW] /12232

HEILONGJIANG MICROWAVE TV STATION--The transmission line for a microwave television station went into operation in Fuyuan County, Heilongjiang Province, in July this year. The station, which cost 500,000 yuan to build, has been broadcasting the Central Television Station's daily programs on a trial basis since September last year. [Summary] [Beijing XINHUA Domestic Service in Chinese 2346 GMT 7 Aug 86 OW] /12232

OPTICAL FIBER COMMUNICATIONS--Xining, 18 September (XINHUA)--An optical fiber telecommunications cable with a length of 15 km went into service today on the Qinghai-Tibet Plateau, the highest in the world. The first in northwest China, the line links the control center and a substation of the Longyangxia Hydroelectric Power Station on the upper reaches of the Yellow River in Qinghai province. The station has a capacity of 1.28 million kw and an annual electricity output of six billion kwh. China is able to produce complete sets of equipment for optical fiber communications, developed in the 1970's. Now, the total length of optical fiber cables in the country totals more than 400 km. [Text] [Beijing XINHUA in English 1523 GMT 18 Sep 86 OW] /12913

TELECOMMUNICATIONS TRAINING CENTER--The Beijing Post and Telecommunications Training Center was officially opened on Wednesday, marking an important step toward modernizing China's telecommunications. "The lack of qualified engineers and skillful workers is a key problem in the process of modernizing China's telecommunications," said Song Zhiyuan, Vice Minister of the Ministry of Post and Telecommunications, at the opening ceremony of the training center. "The center will play an important role in equipping Chinese experts with modern technology. It will also help to consolidate the ties between the telecommunications departments of China and Japan." According to existing Sino-Japanese agreement, the center will be provided with modern equipment made in Japan. For this purpose, the Japanese Government has contributed 2.2 billion yen ($14.3 million), which was mainly used to buy advanced equipment such as a computer network and satellite communication equipment. The center will enroll trainees that include engineers in China's post and telecommunications enterprises and factories, officials and teachers. The trainees will update their knowledge and keep pace with the development of modern technology. [By Niu Qiuxia] [Text] [Beijing CHINA DAILY in English 10 Oct 86 p 3 HK] /12913

COMPUTERIZED DISPATCHING SYSTEM--Beijing, 11 October (XINHUA)--A microcomputer system, used to dispatch news in Chinese, passed state tests here today. Installed in the XINHUA News Agency, the system is able to transmit, on an average, 30 Chinese characters per second, 15 times the speed of facsimile, a method used since the 1950s. It has a story input, editing, revising, storage, dispatching and printing functions. Video display terminals have so far been installed in 36 newspapers and radio stations receiving XINHUA dispatches. Jointly developed by XINHUA and the Commission of Science, Technology and Industry for National Defense, the system was put to use early this year. [Text] [Beijing XINHUA in English 1834 GMT 11 Oct 86 OW] /12913

PROGRAM-CONTROLLED TELEPHONE--Shanghai, 13 October (XINHUA)--The first 2,000-line program-controlled telephone exchange has been produced in Shanghai, China's largest industrial city, a local official announced here today. This success is claimed to have brought China's communications technology equal to the advanced world level of the 1980s. Up to now, China has had to import program-controlled telephone exchanges. The first Chinese made telephone exchange, produced by the Shanghai-based No 1 Research Institute of the Ministry of Posts and Telecommunications, will be installed in Beijing, China's capital. Production of more program-controlled telephone exchanges has already started, according to Liu Ximing, a deputy chief engineer, in charge of developing the first one. [Text] Beijing XINHUA in English 1443 GMT 13 Oct 86 OW] /12913

UPGRADE OF SHANGHAI TELECOMMUNICATIONS--Shanghai, 17 August (XINHUA)--Telecommunications clients in Shanghai will soon be able to get the latest information on politics, economy, science and culture worldwide through computer terminals, a local official said today. Starting next month, the service will benefit enterprises, offices, research institutions, hospitals and other units. By then, the Shanghai long-distance telecommunications office will be connected with the world's major data banks through a data exchanger of the Itacable Company of Italy. Posts and telecommunications have been very much improved in Shanghai over the past few years, the official said. A bleeper paging system with a radius of 20 km has been installed and the city plans to add digital-type and English-language paging systems. [Text] [Beijing XINHUA in English 0127 GMT 17 Aug 86 OW] /12232

SHAANXI TELECOMMUNICATION TRUNK LINE--Xian, 4 September (XINHUA)--China's fourth telecommunication trunk line passed an acceptance check by the Ministry of Posts and Telecommunications in the capital of Shaanxi Province today. Formed by two 1,800-channel coaxial cables, the 501.7-km line from Zhengzhou, capital of central China's Henan Province, to Xian will also serve the electrification of the 1,759-km Longhai Railway, an east-west artery from Lanyungang in Jiangsu to Lanzhou in Gansu. Built in 21 months, the carrier will boost the telecommunication capacity between the two cities 80 times. In 1 to 2 weeks the cable will link the lines in north, central, east, and northwest China to constitute a network. [Text] [Beijing XINHUA in English 1009 GMT 4 Aug 86 OW] /12232

STANDARD TIME BROADCAST--Beijing, 4 October (XINHUA)--Chinese satellite technology is advanced enough to broadcast standard time and frequency with high accuracy through domestic satellites, reports SCIENCE AND TECHNOLOGY JOURNAL. The journal said time error is just one-billionth of a second, raising China's time service to advanced international levels. Standard time service in important to navigation, aerial prospecting of mineral resources, land surveying, offshore oil exploration, and earthquake and meteorological forecasting, the journal says. The technology was the product of the Chinese Academy of Metrology, the No 3 Air Force Research Institute, and the Nanjing Communications Engineering Institute, and it has passed a technical appraisal by the State Bureau of Metrology. Satellite transmission of standard time and frequency is 1 million times more accurate than short wave time service, and has the additional advantage of larger coverage and long-distance transmission. [Text] [Beijing XINHUA in English 1539 GMT 4 Oct 86 OW] /12232

CSO: 5500/4134

PHILIPPINES

GOVERNMENT BROADCASTING CHANGES SINCE FEB 86 VIEWED

Quezon City VERITAS in English 18- 24 Sep 86 pp 20-21

[Article by Ma. Socorro Naguit--"Gov't Media: A Test of Sincerity"]

[Text] THE announcer puts the caller on the air. The voice is that of an old woman, and she says: "*Alam po n'yo, e, hindi po ako sang-ayon d'yan sa pagpunta ni Presidente Aquino sa Amerika. . .*" She is one of *Radyo ng Bayan's* many outspoken callers. Another listener, male, calls in to say he favors selective repudiation of the country's foreign debt. Still another decries the Defense Minister's raising the Communist spectre a little too often of late.

Tuning in to *Radyo ng Bayan* (918 AM) for the first time is like waking up a la Rip Van Winkle from 20 years of media repression and finding that a government station now actually airs views that might easily have constituted "subversion" under the Marcos regime.

The private media have, of course, for six months now enjoyed press freedom to the point where some quarters have begun to wonder whether there is not, in fact, too much of it this time around.

But government media? Who would have thought the likes of CCP founder Jose Ma. Sison, former NPA chief Bernabe Buscayno, and the whole caboodle of personalities branded by the previous regime as "enemies of the state" would one day beam at you from your TV screen, on Channel 4 at that?

Six months after the Aquino Administration assumed power, has President Aquino kept her campaign promise to "dismantle Marcos' propaganda machinery?"

Last week, an office called the Philippine Information Agency (PIA) sent *Veritas* a press release outlining the components of a proposed "new government information system", presumably intended to replace the old one which the deposed strongman had used largely for propaganda purposes.

Benjamin Lozare, Jr., special assistant to erstwhile Information Minister Teddy "Boy" Locsin, Jr. and rumored as the person likely to be appointed head of the PIA, told *Veritas*, "During (then Information Minister) Cendana's time, *naghalo ang* political information and development-oriented information, often with the former crowding out the latter. In the process, the people were shortchanged. When the new Administration took over, the mandate was to dismantle the entire government propaganda machinery and just keep a small presidential press staff. That was our first option. But I thought (that set-up) wouldn't be responsive to the needs of a developing country like ours."

The second option, says Lozare, was "just to streamline the structure of the Office of Media Affairs and the National Media Production Center, and remove duplications of functions so that it would not be a case of 'same dog, different collar.' The third option, which we have proposed, is to have the Office of the Press Secretary as the presidential information staff, create a Philippine Information Agency which will focus purely on developmental communication needs, and spin off the broadcast component (Channel 4 and government radio stations) into independent foundations." Under Lozare's proposal, a Philippine Broadcasting Authority would be created to address the problems of the broadcast industry, while existing government stations would be managed by a Philippine Broadcasting Foundation.

The proponents of the new government information system appear optimistic that their proposal will be approved and that the Executive Order creating the new system will be released by September 15.

Says Lozare: "Some people say it's impossible to create a government information system that will not tend to be used for political ends. But I think we can undertake 'political' projects without being partisan. Like we're putting out materials on the Con-Com, or say when we print the draft of the Constitution, that would fall under the political sphere, but we can do it without being partisan."

To drive home his point that PIA intends to put taxpayers' money to good use, Lozare showed us a 'sheaf of one-page information' materials prepared by the PIA even as it awaits the Executive Order that will formalize its creation. Called "Info-Aide" and printed in Pilipino and English, these include basic information on typhoid fever, another on TB, a farmer's calendar identifying the best months for planting various crops, a guide to securing a driver's license (professional and non-professional), and the steps in registering a cottage industry with the National Cottage Industry Development Administration (NACIDA).

A working paper prepared by Lozare's group notes that in the past, "information needs of the people – required by them to participate meaningfully in the democratic process and to improve their quality of life – were not met." The working paper, which provides the rationale for Lozare's proposal for a new government information system, notes further that a number of barriers prevented information from flowing "as much and as fast as it should have."

Basic information policy (under the previous regime), says the working paper, "focused more on the molding of public opinion toward the unquestioning acceptance of government thinking." 'Relationship barriers' were also present: "There existed a mutual distrust between the government and the people; the manipulative nature of government information led to a deterioration of the credibility even of public information officers concerned with development-oriented information; and relationship between the government and the media did not exactly foster the observance of the highest professional and ethical standards."

The working paper goes on to cite 'infrastructural barriers' to the flow of information under the previous dispensation. It notes the inadequate reach and distribution of media in the Philippines: newspapers are read by less than a third of the population, only 72 percent-77 percent of Filipino households own radios, only 16 percent-22 percent own television sets, and a big sector of the population, living mainly in the rural areas, remains unserved by the news media.

A key feature of the new government information system will be the setting up information centers, which, says Lozare, will serve as one-stop centers that will give a community access to books, newspapers, magazines, government publications, films, vtr and sound-slide showings. "We call these "People's Information Centers" and what we do is write all government agencies to send us brochures and other materials on their offices and programs so these can be available to the people. We've set up 20 of these so far."

PEOPLE'S TV-4

WITH the exception of US Sen. Paul Laxalt's bluntly telling Ferdinand E. Marcos that the time had come to "cut and cut cleanly," no single event could have finally jolted the strongman to the reality that his 20-year reign was truly at an end than the take-over of the government television channel by troops loyal to Gen. Fidel Ramos and Minister Juan Ponce Enrile. It meant, after all, that not only did Marcos no longer have the military solidly behind him, he had also lost his grip on a powerful component of his propaganda machinery.

But just how much has changed at Channel 4, re-christened People's TV-4 after its take-over in February?

Says Patsy Monzon, Channel 4 Deputy Broadcast Manager:

"Gone are the days when everything was centered on the former President and the First Lady, when Channel 4 would pre-empt a regular program to show the President or Mrs. Marcos speaking before this or that gathering or – any little event. For me this is very significant. This time, clearly there is respect for the viewers, so that whether it's a sit-com or a drama or cartoons that we're airing, we don't just pre-empt a "regular" program (to show President Aquino.)"

Monzon cites the channel's coverage of President Aquino's visit to Jakarta and Singapore as a case in point. "In the past, as soon as the 'feed' came in, Channel 4 simply cut in and showed it. But in the case of the Singapore and Indonesia visit, it was planned that each channel would have its own exclusive in the sense that when the President left, either Channel 7 or 9 would cover it; on the other hand, when the President came back, we covered it live. In the past it was Kuwatro (Channel 4) all the time. Now, the policy of Maria Montelibano as head of Radio-TV Malacañang is to involve the other channels in such coverages. If you noticed, Tina Monzon-Palma anchored even if Channel 7 did not cover the event live. So now there is this cooperation with the other channels. We pool talents, and it's a very healthy atmosphere.

"As the government station, we see our role as informing the people of what's going on, what the government is doing for the people. We do this by way of our newscasts and public affairs programs. If you compare the number of hours that Channel 4 devotes to news, it's still far more than what the other channels have to offer," says Monzon. She rattles off Channel 4 public affairs programs: a delayed telecast of *Kapihan sa Maynila*, aired Mondays at 10 p.m.; Con-Com Highlights and profiles on Mondays, Wednesdays and Fridays; a comprehensive wrap-up of Con-Com proceedings at the end of the week; journalist Art Borjal's talk show, *No Holds Barred*, on Saturdays, and the monthly *Dialogue with the President*.

Coming up with the kind of programming that is expected of a government channel, however, is for the moment stymied by two ticklish issues: one, Channel 4's exclusive contract with Vintage Enterprises, which markets the Philippine Basketball Association (PBA) games coverage, and two, the pressure to "go commercial" or otherwise close shop, given the fact that Channel 4 is, according to Monzon, at present not getting a single centavo by way of government subsidy.

Basketball station? Monzon admits that right now "the PBA games coverage really screws up our programming." Under Channel 4's contract with Vintage, Channel 4 is legally bound to air the PBA games on Sundays, Tuesdays and Thursdays from 5 p.m. "until the games finish." "When the games go on over-time, we have no choice but to pre-empt regular programs (including public affairs) for the day. In effect, the PBA takes up an average of 5½ hours each on the days they're played. So the question is, do we really want to give that much prime-time *thrice a week* to basketball? That's a question that we'll have to settle next year, after the present contract expires."

According to Monzon, the contract between Channel 4 and Vintage Enterprises had been signed by erstwhile Information Teddy Boy Locsin before she and Broadcast Manager Conrado Limcaoco, Jr. assumed their posts. While the new PBA contract earns ₱6.3 million for Channel 4 (last year's contract gave the channel a little over ₱3 million), Monzon says: "If you compute the air-time and the use of our facilities for the PBA coverage, we'd earn more by airing other programs instead."

As it is, the private TV stations are reportedly grumbling over the fact that Channel 4 is cutting into their share of the advertising pie.

Says Monzon: "Since July or August this year, Channel 4 has not been getting a centavo from the government. As the government station, we cannot just close shop. We're in a Catch-22 situation: as the government channel, we should be airing public affairs and educational programs, true, but at the same time, we have to admit that it's going to take a long time before the advertising industry will plunk money in a station that's not watched as much as other channels. For instance, if we were to air, say, a program on "How to Milk a Cow," on the same time slot as *Falcon Crest*, which would you watch?"

AT THE TIME of the interview, Monzon had not heard of the Lozare group's proposal to have a Philippine Broadcasting Foundation operate government radio and TV stations. "We've not been briefed on this. I really don't understand how this will work out. It's a beautiful idea, but it's very ambitious. I don't know whether in my lifetime, you can get people to watch Channel 4 if its programming is purely public affairs, purely educational. Of course it can be done if you have the resources: *Sesame Street*, for instance is educational and entertaining at the same time. But to do one animated 30-seconder would take you so many months of drawings and shootings."

Right now, Monzon admits, Channel 4 remains the least-watched station over-all. "It's very difficult to shed off the image that the previous Administration left behind. We cannot be an overnight success, but what's important is that we aim high and I'm optimistic that we'll get there."

A step in the right direction is the plan to create a research group that "will set guidelines to see to it that Channel 4 programs are developmental and educational even as they are entertaining."

As Monzon puts it: "We have a role to play, but at the same time, we must see to it that we are watched."

GOVERNMENT RADIO

"All government stations are now required to tell the truth no matter who gets hurt. We will no longer be used for propaganda purposes," says Jose Mari Gonzalez, one-time movie matinee idol and now officer-in-charge of Bureau of Broadcasts.

Since Gonzalez took over, the government's five Metro Manila radio stations (there are over 20 nationwide) have been re-programmed. "The former VOP or Voice of the Philippines is now DZRB or *Radyo ng Bayan*. Its programming is 100 per cent public service, and it's on a 24-hour broadcast. We get callers from the CD sector from early morning to afternoon, while the A and B crowds call in the evenings. We don't discriminate against a caller on the basis of political or whatever reason. We had Fr. Balweg last night; we even have NPAs calling us, or at least so they say," says Gonzales proudly.

The government's four other stations in Metro Manila have specialized: the former DWIM (an FM station) is now DWBR or *Business Radio; Radyo Pag-asa* specializes in science tips; DZSR or Sports Radio features sports events from *pintakasi* (cockfights) to *sipa;* and *Radyo ng Masa*, caters exclusively to the masses.

"I've been reminding people here that they don't belong to the government, they belong to the people. It's the people who pay their salaries," says Gonzalez, who told *Veritas* that he recently resisted attempts of a provincial governor and one other politician to run the government radio station in their bailiwick. "We're even getting strongly-worded letters from government officials who ask why we allow KBLs to air their views on our stations. But we tell them, you cannot just air one side. We're now maintaining an independent posture."

Gonzalez, like Channel 4's Patsy Monzon, has not heard of the proposal to place the management of government radio and TV stations in the hands of a Philippine Broadcasting Foundation. Under the proposed set-up, the Foundation's financing options would include commercial advertising. Says Gonzalez: "For me, for a government station to go commercial is immoral. Only a radio station that does not take in commercials can be neutral."

According to Gonzalez, Fr. Lagerway of the Communication Foundation for Asia wrote him sometime ago, proposing to buy one of the government's radio stations. "I said no way. You know what will happen if the government stations are sold to the private sector? Our listeners will march to Malacañang. The reason we're popular is we don't have commercials."

If the sentiments expressed by two senior staff members at the Bureau of Broadcasts are any indication, all is not exactly hunky-dory at the government radio stations. Said one: "These people who have taken over the stations have been behaving as though they had a monopoly of truth and patriotism. The fact is that many of us were openly campaigning for Cory, and as a consequence our names were included in a white paper prepared by Cendaña's boys. Now these new people take away rooms and office equipment as they please." He has a particularly serious charge against Gonzalez: "We now play mostly G-records." Gonzalez is president and general manager of G. Records International, Inc. Gonzalez' reply: "That's a big lie. What I've instructed them is to play only Filipino-produced records, whether in English or Tagalog, on our stations. As a matter of fact, my artists' records are played more on commercial stations."

Another Bureau of Broadcasts employee told *Veritas:* "He's very indecisive and he has the habit of hitting people behind their back. And the claim that all callers are welcome to express their view is not true, because *pag* Marcos Loyalists, *binabara*". Whether such sentiments are merely a case of sourgraping from disgruntled holdovers from the previous Administration, or are legitimate charges, is something that Gonzalez must clearly look into, if government radio's attempts to chart a new course are not to be derailed by management problems.

On the whole, it looks as though the Aquino Administration is determined to put government media to better use than to advance political ends, as the Marcos Administration did with impunity. Whether the new government can do better than key Channel 4 as a basketball station, government printing facilities and information personnel as propaganda mills and government radio as the Voice-of-the President, however, will be one more test of its sincerity.

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CSO: 4200/20

TELECOMMUNICATIONS RESEARCH, DEVELOPMENT VIEWED

Budapest MAGYAR TUDOMANY in Hungarian No 5, 1986 pp 329-338

[Article by Gyula Tofalvi, scientific director of TAKI (Telecommunications Research Institute): "Telecommunications and Teleinformatics Research and Development in Hungary"]

[Text] Never before was there an example of the unity and harmony with which the experts of Hungarian telecommunications worked for their common goal as in 1979-80 when they sought the goals of our telecommunications research and development for the Sixth 5-Year Plan. I do not say that this cooperation was perfect--indeed, I will return to the problems in detail later--but it did prove more efficient and effective than ever before. It is sufficient to illustrate this by citing the line-up of the participants in the program developed for the Sixth 5-Year Plan:

Figure 1. The Line-Up for OKKFT-A/5 and OTTKT-K8, 1980-1985.

IpM--OMFB
The Hungarian Post Office
BME--MuFKI--TKI--PKI--KKVMF
BHG--BRG--FMV--HTV--MEV--Orion--Terta
Budavox

(OKKFT, National Medium-Range Research and Development Plan; OTTKT, National Long-Range Scientific Research Plan; IpM, Ministry of Industry; OMFB, National Technical Development Committee; BME, Budapest Technical University; MuFKI, Technical Physics Research Institute of the Hungarian Academy of Sciences; TKI, Telecommunications Research Institute; PKI, Postal Experimental Institute; KKVMF, Kalman Kando Electric Industry Technical College; BHG, the BHG Communications Engineering Enterprise; BRG, Budapest Radio Engineering Factory; FMV, Precision Engineering Enterprise; HTV, Communications Engineering Entrprise; MEV, Microelectronics Enterprise; the Mechanical Works; Orion Radio and Electric Enterprise; Terta, the Telephone Factory; Budavox, the Budavox Communications Engineering Foreign Trade Enterprise.)

The guiding principle in our work, even when working out the program, was that we should fit research and development primarily to the need to develop the Hungarian telecommunications network, naturally taking into consideration also that the new product structure of our telecommunications industry should also correspond to the needs of export.

Even the titles of the programs were intended to emphasize service to development of the Hungarian telecommunications network:

OKKFT-A/5: "Research and Development on Telecommunications Systems, With Special Regard to Development of Systems";

OTTKT-K/8: "Research and Development on Communications Systems and Equipment."

By this time also a favorable change had taken place which resulted in successful cooperation between the Hungarian telecommunications industry on the one hand and the Hungarian Post Office and the university research sites on the other.

Research and Development Strategy and Conception in the Years 1981-1985
We based the strategy of the research and development program we worked out for the years 1981-85 on three chief factors: microelectronics, digitalization and the adoption of new professional cultures.

Microelectronics offered telecommunications--as it did for the other areas of electronics--the possibility of an entirely new epoch. This possibility demanded substantive changes everywhere from circuit design to building equipment, systems and networks.

Digitalization meant the end of one great period (analog) and the beginning of another even greater (the digital period). In its methods digitalization offered much richer possibilities than before resulting in an improvement in reliability of an order of magnitude, bringing epochal progress in its transmission characteristics and the realization of a telecommunications more economical than ever before.

The adoption of new professional cultures meant for us primarily the start of research and development connected with optical telecommunications and space telecommunications. We might also list here the use of new frequency domains, increasing the speeds of signal transmission and goals formulated in the area of signal processing, speech analysis and speech synthesis.

A number of other factors figured as conditions in working out our research and development program for the Sixth 5-Year Plan; these were consequences of the already mentioned strategic goals or their importance affected only some areas of telecommunications engineering. A few of these were: network integration, services integration, the convergence of telecommunications and computer technology, the integration of electronic parts and equipment and the convergence of broadcasting and telecommunications.

We performed the research and development done within the framework of OKKFT-A/5 in three coordinated subprograms: a. systems technology, b. switching technology and c. transmission technology research and development.

In the systems technology subprogram we gave priority to complex, digital telecommunications networks for subscriber, rural and suburban areas and to expanding the services of telecommunications networks. In the area of switching technology the stressed tasks were stored program controlled electronic subexchanges, computer based automatic equipment for monitoring and maintaining exchanges, and taking over and adapting subscriber, extension and main exchange licenses. In transmission technology the chief tasks were development of regional and main line, wired and wireless, analog and digital transmission systems and equipment and taking over and adapting licenses to expand digital solutions.

Those who are better acquainted with the structural system of the telecommunications network of a country will immediately recognize the deliberate conception which unfolds in the wake of the foregoing priorities, primarily the fact that a comprehensive effort was being made to develop the Hungarian telecommunications network. If we add the research and development done within the framework of the long-range OTTKT-K/8 program then we get a full picture of the result of the common work mentioned in the introduction.

The research and development done within the framework of OTTKT-K/8 had six main themes:

1. systems engineering and systems technology,
2. switching technology,
3. wired transmission technology,
4. wireless transmission technology,
5. radiotelephone technology, and
6. subscriber end-equipment technology.

From the beginning we considered the harmony of the programs to be a first order requirement. Our goal was for the OTTKT-K/8 program to serve primarily preparation for the research and development of the future.

We planned to turn a total of 2.7 billion forints to telecommunications and teleinformatics research and development work, to investments connected with it and to the purchase of licenses. This was divided up as follows: 2.3 billion forints for OKKFT-A/5 and 0.4 billion forints for OTTKT-K/8. The planned ratio of central and enterprise sources was 31/69 percent.

Results of the Sixth 5-Year Plan Period

On the basis of the results achieved between 1981 and 1985 it is my opinion that--despite all the unexpected braking and deterring factors--this period of our telecommunications and teleinformatics research and development was a creative, successful and effective period. We developed systems, systems component equipment and procedures which ensure suitable domestic products for the liquidatation of the serious backwardness of the Hungarian telecommunications network, gradual digitalization and further development of the domestic network and a renewal of the export product structure of the domestic telecommunications industry. I must stress the results we achieved in the area of digitalization, use of microelectronics and introduction of new professional cultures.

Of the factors holding back progress I judge the following three to be most serious:

--As a result of the conditions of our industrial environment and of the situation of our national economy between 1981 and 1985 conditions developed over the past 5 years in the supply of primary materials, parts, technology and tools of production which are worse than ever before;

--The restrictions piling up with the worsening of the international situation prevented our being able to obtain and put into production in the planned time frame the license for a stored program controlled, digital main exchange;

--During the past 5 years we were unable to see to it that the comprehensive, systematic development of the Hungarian telecommunications network got priority and a system of suitable conditions.

The effectiveness of the "cooperation with a common goal" mentioned in the introduction is proven by the fact that the community realizing the program (Figure 1) not only paid attention to seeing that it corresponded to the network, system and equipment engineering requirements but also had the strength to find solutions to such questions as:

--the quantitative and qualitative further development of the university teaching and research base;

--a further development of the preparedness of the experts working in industry, as required by the technological generation change;

--aiding the publication of Hungarian and foreign language telecommunications and teleinformatics books;

--developing a coordinated university, college, institutional and industrial position in connection with national programs; etc.

It is not possible in such a short article to review the many results achieved in the area of systems, equipment, procedures, etc. and in the basic research preparing for the research and development of the years ahead. I can restrict myself to merely listing a few examples, but I feel that these will be able to characterize the effective work which took place here in this area in the past 5 years.

Systems technology: The Time Sharing Subscriber Radio Network System to link groups of subscribers in sparsely settled areas, with scattered locations and little traffic, into the national public telephone network. I might also mention the land-line PRS or the radio CLS system.

Switching technology: The family of telephone subexchanges with a capacity of 16-100 extensions using microcomputer, stored program controlled, time sharing switching fields. The equipment solution chosen and the digital structure provide an obvious opportunity for links to PCM connections with a small number of channels, and thus for integration of switching and transmission services at the lower levels of telecommunications networks, in the final analysis for their use in Integrated Service Digital Networks. I might also mention the results achieved in the areas of centralized monitoring systems, rural exchanges, etc.

Transmission technology: Analog radio relay equipment operating in the 4-6-7-8 GHz frequency ranges using third generation technology and uniform systems engineering for main line or area network transmission of 960-1,800 FDM telephone channels, images and accompanying sound or data information with the same band width. An analog system, metal conductor, carrier frequency, transmission technology connection system with a new generation of multiplex and line span equipment, with capacities in the 12-2,700 telephone channel range. I might also mention the results achieved in the area of transmission at 34 M bits per second signal speed.

Optical telecommunications: Equipment for a PCM tertiary speed, light conducting transmission system operating at a wave length of 950 nm to establish urban links. Of significance equal to the foregoing are the research and development results in atmospheric optical transmission.

Space telecommunications: Modern fixed channel division telephone channel generating equipment using the digital principle which can be operated with both PCM and ADM channels to improve the telephone traffic properties and services of the Intersputnik artificial satellite telecommunications system, with Intelsat compatibility.

Basic research: Research on the possibility of realizing signal transmission speeds of 140 M bits per second, in preparation for research and development work on metal and light conducting and radio relay connections; research on applications questions and problems in the 1.3-1.6 micron optical wave lengths and in microwave frequency bands above 10 GHz, in preparation for equipment research and development.

Together with the achievements we must also talk about our failures:
--As I already mentioned, we were unable to obtain a license for a stored program controlled, digital main exchange. This fact significantly reduced the comprehensive character of our telecommunications and teleinformatics research and development program and thus the possibility of the economic realization of the program.

--We were not able to perfectly coordinate license purchases by the several enterprises. There are as many sources as there are licenses! We must bear the technical and economic consequences of this for years (design, parts and technological heterogeneity).

--The immediate introduction into manufacture of the results achieved was not realized in every case. In more than one case those doing the research and development had to manufacture the first copies of the systems or equipment. Giving up the continuity of research and development, breaking it into phases, is a serious consequence of this. The source of the problem is the lack of comprehensive planning and organization of the complex production process, the realization of the innovation process at a number of bases with different interest systems.

--We cannot be satisfied with the results we achieved in the past 5 years in the area of standardization.

--Our forces and assets are divided up in some theme areas. More time than allowable is necessary to solve the tasks selected, more time than our available forces and assets would otherwise make possible.

--The braking effect of the low level background industry frequently slows our research and development.

--We were able to make virtually no progress in the area of socialist international cooperation. The cooperation which was achieved with capitalist countries is far less than we need given our conditions. We can attribute primarily to this the fact that we were not able to make that selection in our research and development program which would have better suited our forces and assets.

Prospects for Our Research and Development

When selecting the communications engineering goals for the Seventh 5-Year Plan and working out the program we had and have tasks of a different character than at the time of preoaring for the Sixth 5-Year Plan.

Then microelectronics was still treated as a "miracle", we expected much more from it than we should have; our decisions connected with digitalization meant essentially saying farewell to our entire previous life and beginning a completely new life; the great dilemmas of introducing new professional cultures were resolved in the fire of broad debates lasting for months.

Now our chief tasks are primarily repeated review of the new goals selected in 1979-1980, making the necessary corrections and uniting as far as possible the efforts which are diverging with elemental strength.

In regard to the goals selected and the research and development forces and assets at our disposal we have fallen under contradictory influences. A smaller part of the research and development forces have left us in the meantime--in the wake of great social opportunities--and a large aging generation is saying its farewells in the area of telecommunications. The young people arriving at the same time will be able to take the place of their knowledgable and experienced predecessors with the same value only after a time. When selecting a number of goals which could not be neglected we struggle with a shortage of experts despite the fact that the necessary research and development forces do exist in the country; unfortunately they are scattered. We have only one solution--we must put more confidence in the young people and assume all the consequences of doing so. So, attaining the goals selected will require the growth of the research and development guard, already outstanding by international standards, will require either a more comprehensive selection or a concentration of forces and assets.

The situation is similar in regard to assets. Our assets have increased and become richer in recent years, but considering the development of the electronics culture, the swift growth of requirements and the research and development goals selected the level of our assets supply is substantially lower than would be absolutely necessary for work of such content and complexity.

It is entirely our own fault that in some theme areas the forces and assets available to us in the Seventh 5-Year Plan period will be available only in a dispersed fashion. As a result of this the research and development capacity, outstanding as a whole even by international standards, represents a substantially smaller force than would be possible considering the total numbers.

We are already late in starting up our program! For two years, in 1979-1980, all participants in the program starting in 1981 worked together, partly on the technical-economic definition of the tasks and on the distribution of labor in execution and partly on preparations to start up the program. Now, after the beginning of the Seventh 5-Year Plan, even today, we have not gotten so far along as to be able to exchange ideas together (!) even once. Even the preparation of the 1985 annual program took place at "limited meetings." Not once have we had a common, comprehensive debate. Thus it could happen that when the OMFB convened the first communications engineering meeting at the end of January 1986 the enterprises took exception one after another saying that they were unacquainted (!) with the content of the OKKFT G-1 program worked out for the Seventh 5-Year Plan.

Thus it could happen that at the first group meetings after the start of the 5-year plan period the chief task continued to be to eliminate from the inadequately prepared program the redundancies, superfluous parallelisms, themes serving the aspirations of some narrow groups, etc.

It is the beginning of February as I write down these ideas.
Virtually everything has changed in regard to the telecommunications-teleinformatics program compared to previous years. The patron of the program, the order developed thus far for coordination of the program and, what is the biggest problem, the form and content of the joint work done thus far, all have changed.

Coordination of execution of the telecommunications-teleinformatics program will take place in a partitioned way, broken into themes, probably in 5-6 groups. In this sort of system the participants will see primarily the telecommunications "bricks" and will see the "telecommunications house" only in part. It is true that there is an advantage to the present system in that several times a year those telecommunications experts who participate in the work of the top committees can look at the surface of the research and development taking place in the area of computer technology and automation, but in exchange they give up the regular, comprehensive meetings, debates and conversations of telecommunications experts. In my opinion telecommunications coordination taking place in 5-6 groups is another victory for partial thinking!

We had a good system and good coordination earlier. Everyone recognized this during the past 5 years. Instead of our thinking about how we might solve the still unsolved problems connected with the plans we started up a completely new form of coordination--and did so late. The "cause" will suffer for this. (I ask my dear readers to accept or reject the objectivity of my statements in the knowledge that up to now I was program commissioner for OKKFT-A/5 and OTTKT-K/8.)

I completely agree that the OMFB should comprehensively coordinate the electronics program. Considering that applications have become one of the souls of the program there could be no better solution! But! The partial view was again victorious when the OKKFT G-1 and GFP were assigned to the OMFB while the EKFP [Central Electronics Development Program] dealing with electronic parts and the OKKFT G-5 were assigned to the Ministry of Industry. It would be difficult to find a line-up more irrational than this! This way the OMFB can cover only part of electronics, and the Ministry of Industry also. Whom does this benefit? It is harmful! It is very harmful that at the beginning of every 5-year plan we must start virtually ab origine. It is harmful that our relays are not continuous and that we make new problems for ourselves at the divisions.

The strategy for Hungarian telecommunications and teleinformatics research and development and the chief directions for its development were decided for the long range in the course of the broad debates preceding the Sixth 5-Year Plan period, determining also the research and development strategy and the chief directions of development for the years 1986-1990.

Even today we can designate the following as our chief goals:
--the primacy of systems and networks,
--development of the Hungarian telecommunications network,
--a new and more exportable product structure,
--the integrations and convergences already formulated in the Sixth 5-Year Plan programs,
--analog-digital compatibility,
--development of an Integrated Services Digital Network,
--creation of automated networks not requiring supervision,
--expanding microwave frequency ranges and optical wave length ranges,
--increasing the speeds and capacities of information transmission,
--expanding and integrating telecommunications services,
--adapting a culture for stored program controlled, digital main exchanges,
--system and equipment designs based on computer technology,
--research and development serving, aiding and laying the foundations for international cooperation, and
--basic research in preparation for research and development in the years 1990-2000.

Here are only a few main themes among the tasks for the Seventh 5-Year Plan period:

Network planning and operation: computer aided design of telecommunications networks, with special regard to expanding and integrating services; optimization; preventing overloading; new man-machine links; reducing the live work needed for operations.

Systems technology: increasing the capacity of systems started in the Sixth 5-Year Plan period, expanding them with new services, extending their applications areas, expanding their operational ranges, making use of new frequency ranges, integrating telecommunications and teleinformatics services; artificial satellite information transmission; extending free channel access; expanding packet communications; expanding space telecommunications services.

Narrow band service expansion and service integration: developing equipment and operating program systems for a narrow band digital base network; teleinformatics services; teledata services; aiding the building of an integrated digital data network; local computer network type services.

Switching technology: taking over and adapting a license for a stored program controlled, digital main exchange; research and development on subexchanges and rural exchanges in harmony with this; further development of computer network, centralized operations systems.

Transmission technology: continuing research and development on a digital multiplex family with a signal speed of 0.7-140 M bits per second: ensuring transmission at such signal speeds in metal and light conducting and radio systems; cultivation of the 0.8-1.6 micron wave length range and expanding optical telecommunications services; modems and multiplexers for data transmission; expanding the frequency range to 20 GHz; modern autonomous and auxiliary ultra short wave radio networks operating in VHF and UHF frequency ranges; cellular radio communications.

End-equipment technology: subscriber end-equipment; residential and office terminals; microcomputer telephone devices; dispatcher equipment.

Basic research: research on information transmission and systems theory; optical transmission in the 2-10 micron wave length; use of the 20-40 GHz frequency range; optical signal processing; new optical devices; starting optical transmission at a signal speed of 560 M bits per second.

Development of the Domestic Telecommunications Network

I emphasized in the introduction that even when working out the R and D program for the Sixth 5-Year Plan we turned special attention to systems, equipment and solutions required for the development of the Hungarian telecommunications network. Throughout the Sixth 5-Year Plan period we coordinated our every essential step with experts from the Hungarian Post Office, so I can even say that the experts of the Hungarian Post Office participated directly or indirectly in the development of all our research and development achievements. They were members of the OKKFT-A/5 and OTTKT-K/8 Program Council, of its Experts Council and of the experts councils for the subprograms and we invited them to our limited experts debates, exhibits and report meetings. It is thanks to this creative cooperation that the product structure which developed in the years between 1981 and 1985--together with systems and equipment developed before 1981--was able to cover more than 80 percent of the systems and equipment figuring in the network development plan of the Hungarian Post Office for the years 1986-1990. It appears that a significant proportion of the missing 20 percent can be obtained from socialist countries.

Just as the experts of the Hungarian Post Office aided our research and development so we participated in those debates and conferences which served to work out the developmental conception for the Hungarian telecommunications network up to the year 2000. At the debates and conferences held in the Academy special committees, in the OMFB, in the MTESZ [Federation of Technical and Scientific Associations], in limited expert circles, etc. it was always my personal opinion that going beyond the three version network development proposal worked out by the Hungarian Post Office a fourth version, which no one dared work out, might be suitable for solving the network development problems of the years ahead (Figure 2). Taking into consideration our economic and social development and the restrained network development practice of past decades it might be desirable to have a fourth version which could liquidate our existing serious backwardness within a foreseeable time. I say all this with a knowledge of the present situation of our economy! Indeed! I say it precisely in the interest thereof!

Life has justified the experts of the Hungarian Post Office! The government decision at the end of 1985 could accept only the second version of the three versions submitted by the Hungarian Post Office, a version representing a medium developmental dynamic, creating a theoretical possibility that development might be accelerated by bringing in additional outside sources. Figure 3 well illustrates the consequences of the second version according to which we have accepted that--if it is not possible to bring in additional sources--the number of unsatisfied needs will increase during the next 5 years by about an additional 100,000. I feel that there is no need to emphasize the social and economic effect of this.

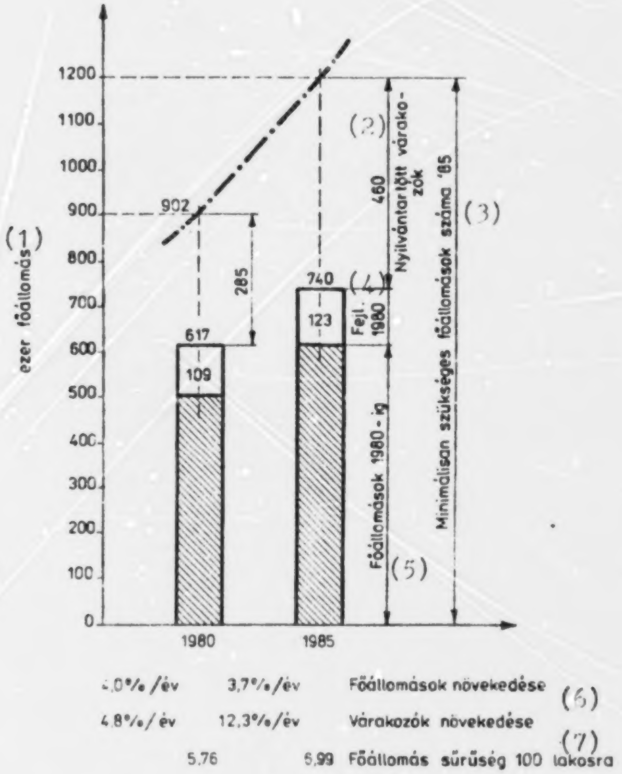
In the past an unfounded charge has been repeatedly made that the Hungarian electronic equipment manufacturing industry is the cause of the backwardness of the Hungarian telecommunications network. A manufacturing branch which exports almost two thirds of its production--even looking back a decade--would have been capable at any time of satisfying the needs of the Hungarian Post Office, supplying 70-80 percent of the necessary products, if there had been solvent demand and an appropriate incentive system for it.

The past 10 years' export of the five telecommunications enterprises gathered into Budavox and their export plans for the next 5 years clearly show how Hungarian industry and Hungarian made telecommunications systems and equipment aid the network development of socialist countries (e.g., Czechoslovakia). Czechoslovak network development provides an example of how supplies far exceeding the level of the Hungarian telecommunications network can be provided in a country with the aid and cooperation of the Hungarian telecommunications industry. Let me only note that when we judge the background industry role of the Hungarian communications engineering industry we must consider in addition to the export of the five Budavox enterprises the delivery capability of Videoton, the HTSZ [Communications Engineering Cooperative], the TKI, the MM [Mechanical Works], etc. A few years ago we celebrated the export of the one millionth line, and at the same time in our own country the decades old serious backwardness increased, the cause of which is not the Hungarian Post Office! The Hungarian telecommunications network can develop only as fast as the conditions for it are provided to the

Hungarian Post Office. Naturally the Hungarian telecommunications industry is not capable of overcoming the backwardness of many years in a single year or the shortages of decades in one 5-year plan cycle.

A Closing Thought

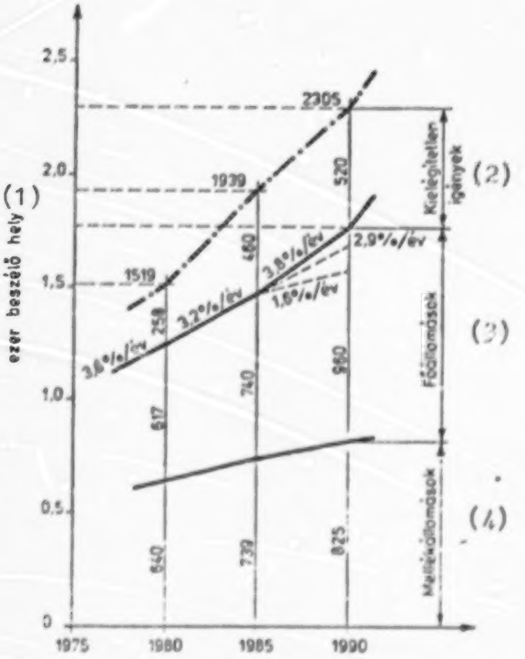
The question of why we are not always capable of living at the level of our own possibilities must be posed primarily to ourselves.



2. Távbeszélő főállomások (1980–1985) (8)

Figure 2. Subscriber Telephone Main Stations (1980-1985)

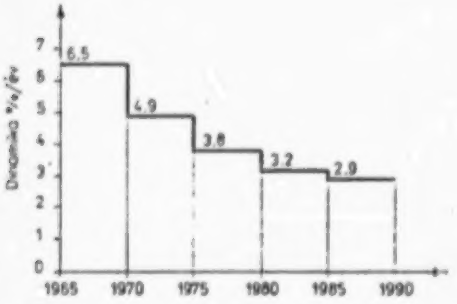
1. 1,000 main stations
2. Recorded number waiting for installation
3. Minimum number of main stations needed in 1985
4. Increase during 5 years
5. Main stations as of 1980
6. Increase in main stations, 4.0 percent per year, 3.7 percent per year
7. Increase in number waiting, 4.8 percent per year, 12.3 percent per year
8. Main station density per 100 inhabitants, 5.76, 6.99



3. Fő- és mellékállomások (1980–1990)

Figure 3. Main Stations and Extensions (1980-1990)

1. 1,000 telephones
2. Unsatisfied needs
3. Main stations
4. Extensions



4. A hazai fő- és mellékállomások fejlődési dinamikája

Figure 4. Developmental Dynamic for Domestic Main Stations and Extensions

Dynamic expressed in percent per year.

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CSO: 5500/3001

SATELLITE OFFICIAL COMMENTS ON CARIBBEAN USAGE, POTENTIAL

Bridgetown BARBADOS ADVOCATE in English 11 Sep 86 p 6

[Text]

PORT-OF-SPAIN, Trinidad, Wednesday (AP) — The head of Trinidad and Tobago's Government satellite facilities said last weekend that countries in the English-speaking Caribbean are not fully using their technical capacity for the exchange of programming.

In informal remarks to news reporters, Mr. Lennox Worrel, general manager of Trinidad and Tobago External Telecommunications Company (TEXTEL), said there is no reason why significant events in Jamaica, Barbados or Trinidad cannot be simultaneously telecast in at least those three countries.

Live telecasts

Several other countries have the capacity to receive live telecasts, Mr. Worrell noted. Remaining countries could get copies by air express for next-day broadcast, he said.

The Textel manager blamed lack of will on the part of regional institutions and organisations for the low level of interest in the exchange of programming. He admitted that for successful exchange, there must be adequate production of material of interest to the different countries in the region.

But the excuse put forth, he says, has often been money — the supposedly high cost of producing and exchanging programmes.

The idea of binding the Caribbean into closer union through the mass media has long been advocated by regionalists, and is acknowledged in the treaty setting up the Caribbean Community (CARICOM).

In his remarks, Mr. Worrell also expressed concern over the emergence in the United States of commercial satellite systems which he said may cripple the international satellite system (INTELSAT) by reducing rates to attract subscribers. Intelsat is owned by a group of 110 countries throughout the world.

In addition, the telecommunications manager mentioned fears voiced in some quarters that programming from the United States can weaken Caribbean cultures.

/9274
CSO: 5540/009

INTER-AMERICAN AFFAIRS

BRIEFS

NEW CANA SERVICE--The radio division of the Barbados-based Caribbean News Agency (CANA), in collaboration with the United Nations, has launched a new service for regional radio stations. For the next 14 weeks, the two-year-old Canaradio will feed a 15-minute un-produced Caribbean news roundup to over 20 regional stations which have signed up for the service, according to marketing manager Carlton Proute. The weekly service coincides with this week's start of the 41st session of the United Nations General Assembly. Stations expected to subscribe to the service are in the Windward and Leeward Islands, Barbados, Trinidad and Tobago, Jamaica, Bermuda, The Bahamas, the Turks and Caicos, the Cayman Islands and Guyana. The service will last for the duration of the general assembly. [Text] [Bridgetown BARBADOS ADVOCATE in English 22 Sep 86 p 1]
/9274

CSO: 5540/009

TV-STATION LICENSING PROCEDURES CRITICIZED

Belize City THE BELIZE TIMES in English 21 Sep 86 p 1

[Text] Television operators representing at least eight TV stations are protesting in the strongest possible terms the conditions of licenses to operate their privately owned stations.

The operators appear to be particularly concerned over Mr Nestor Vasquez' of Belize City TV 7--a close confidante of the Prime Minister. Mr Vasquez' is also the only TV operator who sits on the Belize Broadcasting Authority Board.

In a letter to the Prime Minister, signed by five of the eight TV operators who received licenses in August, the operators "take exception to the inordinate amount of adverse influence he (Vasquez) can exert on his business competitors as Chairman of BTA and find it impossible to believe that the impartiality of the Board will be preserved where such conflict of interest exists."

The TV operators also take objection to the exorbitant rates charged by the Broadcasting Authority and the "blatant censorship and unjustifiable control of television in Belize." They refer to a condition for licence which requires them to submit to the Authority, their weekly programmes seven days before the programme is aired.

Another area of contention lies in the broadcasting of news which the TV operators find "suited to the convenience of those with 'connections' in Belize City."

In his usual dictatorial style, the Prime Minister has replied to the TV operators to the effect that the conditions of licences wrested on the Authority and TV operators are in no position to have any input in the decisions of the Authority. PM Esquivel further expressed that the operators had no cause to be discontent! Talk about freedom of the media.

/9274
CSO: 5540/010

BOLIVIA

MODERN ELECTRIFICATION SYSTEM COMES TO PROVINCE

La Paz EL DIARIO in Spanish 20 Sep 86 p 6

[Text] On the occasion of the Virgin of the Assumption Day commemoration on 12 August and amid a display of enormous happiness, a modern electrification system was inaugurated in Chuma, capital of our department's Munecas Province.

The completed project cost approximately $35,000, 80 percent of which was financed by Engineer Daniel Riveros Gamez, the well-known Bolivian businessman. He donated a brand-new modern generator set with a capacity of over 9,000 electric lamps. Town residents, through the Hector Enriquez B. Pilgrims Brigade, contributed 15 percent of the project's total investment, while other residents donated the remainder 5 percent. This shows that such an important project was a joint effort.

Engineer Daniel Riveros made official delivery of the electrification system in the presence of civilian and religious authorities and all the people that attended the ceremony. In his speech, Riveros referred to the neglect in which towns of the department find themselves, particularly Chuma, whose most pressing needs are not taken care of by government authorities. He said that he felt special satisfaction in delivering this project, which is the result of a joint effort between him and the pilgrims organization headed by Santiago Alcazar R. He added that the brigade was the forerunner and executor of this project, which the people of this area of our homeland had wanted for so long. He also made special mention of the cooperation received for the installation of light poles, which was the unskilled help provided by local residents. "This project shows what the people of Chuma can do and I am proud to support such efforts," he concluded.

For his part, Froilan Riveros, senior commander of the Pilgrims Brigade, said his organization once again identifies itself with its people by contributing to a new project that will benefit some 200 families with the essential electric power service. The Pilgrims Brigade representative praised the great cooperation and unselfishness of Engineer Daniel Riveros, whose gesture should be emulated by many of the country's businessmen. Lastly, he urged the townspeople and persons of good will to continue their cooperation with the brigade to tackle new projects which in the end will be of direct benefit to Chuma.

Modesto Larrea, spoke as a representative of the Chuma Action Center, which headed the enterprise. He expressed gratitude to Daniel Riveros for his cooperation; recognizing also the selfless effort and work of the center's commander, Santiago Alcazar R., and its finance secretary, Gonzalo Alcazar R. Concluding, he highlighted the importance of the Pilgrims Brigade in carrying out works of community benefit.

9925/12948
CSO: 5500/2003

BOLIVIA

BRIEFS

DIRECT DIAL SYSTEM ANNOUNCED--The National Telecommunications Enterprise (ENTEL) today dedicated a system of direct international dialing between Cochabamba and the rest of the world. The information was revealed by ENTEL authorities who stressed the importance of this achievement and added that with the present system it will be possible to do without the operators from the central offices in La Paz. A three minute international call will cost 14 million Bolivian pesos. [Text] [La Paz La Red Panamericana in Spanish 1700 GMT 1 Oct 86 PY] /12913

TELEVISION RELAY STATION--The Gran Poder Cooperative has donated a television relay station to Sorata, Larecaja Province. [Summary] [La Paz EL DIARIO in Spanish 20 Sep 86 p 6 PY] /12913

TELEPHONE EXPANSION LACKS FUNDS--The La Paz Automatic Telephones Enterprise (TASA) needs at least $50 million to carry out the seventh telephone service expansion project in the city, TASA General Manager Enrique Ackermann has said. The project includes the installation of 50,000 lines, but he explained that the comptroller general of the republic has ordered a freeze on the work as a result of a number of irregularities in the call for bids. The TASA official further noted that TASA, and much less the government, do not have the financial resources to continue with the project. Referring to public pay telephone service, Ackermann said pay telephones that still operate with the 5-peso coins that were withdrawn from circulation long ago, are being removed gradually because TASA is losing money with them. Therefore, it has been decided to remove the 550 pay telephones to adapt their coin slots to accept the tokens that replaced the 5-peso coins. He said that reinstallation of these instruments will begin in January because their repair and installation will take a few months more. Ackermann emphasized that the price of the tokens and their payment system still have not been established, but added that TASA already has the tokens. [La Paz EL DIARIO in Spanish 15 Sep 86 p 2] 9925/12948

CSO: 5500/2003

ST LUCIA

PAPER CALLS FOR GREATER GOVERNMENT INVOLVEMENT IN TV

Castries THE WEEKEND VOICE in English 13 Sep 86 p 2

[Editorial]

[Text] FOR the last 20 years, television, off and on, has been a major topic of discussion in St. Lucia. It all started with the modest attempts by SLTV in the 1960s to provide a service to St. Lucians and has continued now with the efforts by Helen Television System, which came on the scene nearly four years ago, promising to usher in something new and exciting in television viewing.

In recent times, however, the debate over local television has raged on, sometimes furiously not only in Castries but in the south and other parts of the country as well where various people, some capable some incapable, have been allowed to enter the industry primarily with the intention of providing a decent service, but all failing along the way, for one reason or another.

So after 20 years in the television business, so to speak, St. Lucia does not have a national or proper television system as Barbados, Trinidad or Martinique has. What it does have, however, is no shortage of individuals invading the homes of our people in all parts of the island showing us what they — a very small minority, in some cases a single individual — think we should see.

Worse than that is the fact that the country has no official policy for television, a very powerful, important and sensitive medium. And this at a time concern in the region, about the ill-effects of foreign television programmes, especially those beamed by satellite from the United States.

Frankly, we do not agree with all that we hear about satellite TV programming, be it from the region's intellectuals, cultural activists, politicians or even TV system managers- people with their own biases and prejudices who, given the chance would willingly assume that present role of the Local TV operators and decide among themselves what we should and should not see without the slightest consideration for the our own views.

But we do believe that St. Lucia is at the stage where Government input is desperately needed to point the development of television in a direction that will reflect the aspirations of a people coming out of a very unique colonial experience.

Unfortunately, until now, the Government has seemed content to allow the local TV Industry to develop on its own steam notwithstanding the dangers that are obviously inherent in such a policy. It has taken more than 18 months for a statement by the Prime Minister that the Government would regulate television broadcasting to materialise.

We welcome the publication of the Telecommunications Act 1986 which seeks to update existing legislation dealing with telecommunications, including television. We will comment on that particular legislation at a later date, after studying it closely.

Suffice it to say however that we consider Government input in the television direction of the country very crucial at this stage, if it frees the public from the poor, inefficient, unprofessional and unplanned service that we have been subjected to for the last two decades, and gives some semblance of dignity to the aspirations of our people at this critical stage of our development.

/9274
CSO: 5540/011

INDO-SOVIET PROTOCOL ON COMMUNICATIONS SIGNED

New Delhi PATRIOT in English 4 Oct 86 p 7

[Text]

Moscow, Oct 3 (PTI) — Telephone calls from India to Moscow are expected to be put through with the same expedition as in the other direction when operator dialling from Delhi will become semi-automatic on the new year's day.

This is made possible under a protocol signed here by Mr D K Sangal, Secretary of Department of Telecommunications, and Mr G G Kudriavtsev, First Deputy Minister of Posts and Telecommunications in the USSR.

The Soviets have at the same time offered to extend direct dialling facilities to 100 Indian subscribers in Moscow including embassy officials, trade representatives and journalists.

Telephone calls from India can also be made to these Indian numbers as well as 900 other foreign diplomatic, business and journalistic representatives and to Soviet organisations who maintain relations with foreign countries.

Mr Sangal said that India will study the extension of subscriber dialling service now available to 14 countries for the Soviet Union as well.

The International Telephone Exchange introduced STD facility in Moscow during the 1980 Olympiad, and later used the equipment for internal STD service, according to Mr Kudriavtsev.

The worldwide STD facility was subsequently reintroduced in 1981 for the benefit of diplomats and business representatives in the foreign community as well as to foreign correspondents who specifically sought it.

At present, the facility is available to four telephones in the Indian embassy.

The Indian and Soviet delegations have agreed to study joint development of telecommunication technologies and equipment for possible co-production to be used in their as well as third countries.

Co-production of digital telephone exchange equipment, digital transmission equipment including optical fibre systems are of interest to both the countries. Mr Sangal is of the view that Soviet and Indian telecommunication expertise are now of the same level.

/9274
CSO: 5550/0013

EXPERTS FOR CLANDESTINE TRANSMITTER IN PUNJAB

Bombay THE TIMES OF INDIA in English 7 Oct 86 p 1

[Text]

AMRITSAR, October 6 (PTI).

EXPERTS are investigating whether terrorists are operating a high-powered transmitter somewhere in Gurdaspur or Amritsar districts.

The existence of such a transmitter came to light when suspected terrorists jammed the communication set-up of the state police, known as "Duplex" system, for about 30 minutes on September 30.

This system links all district police headquarters in Punjab and is used for giving alerts, according to police sources.

The district police wireless system was also jammed for some time on the same evening and this is not possible without a high-frequency transmitter with tall antennae, the sources said.

They did not rule out the possibility of the transmitter being located across the border in Pakistan.

The terrorists not only jammed the communication set up, but also surprised police officials by establishing contacts on their system.

Meanwhile, three suspected terrorists were arrested and a mini-arms factory supplying weapons to extremists was unearthed during the last 24 hours.

In Patiala, the police unearthed a mini-arms factory and arrested Saranjit Singh, who was running it in a house in the government press colony allotted to his mother, a press employee.

Saranjit was nabbed while he was taking out four revolvers.

In Hoshiarpur district, two suspected terrorists were held and two stolen scooters recovered from them. They were identified as Sarwan Singh of Kotla village and Surrinder Kumar of Tand.

In Chandigarh, it was disclosed today that the underground "Panthic committee" had masterminded the attempt on the life of Punjab police chief, Mr. J. F. Ribeiro. The responsibility of executing it was given to a dismissed police constable and four others.

LONE BLACK SHEEP

Disclosing this, Mr. Ribeiro said the assailants also had inside information about his movements and deployment of security. Someone from the force had definitely helped the gang in surveying the area.

Mr. Ribeiro said the former constable, Sukhdev Singh alias Sukha, sat in the jeep along with the driver in a police officer's uniform while three others fired at him.

The police chief said that while the "black sheep" who helped the terrorists would be found out "it is not fair to blame the entire force for the incident. My men have been doing a fine job and I am proud of them".

Mr. Ribeiro said the real security lapse was that the terrorists could enter the heavily guarded Punjab armed police (PAP) complex at Jalandhar. They appeared to have avoided entry through the main and other gates despite being in uniforms and came in a jeep from an unguarded gap in the boundary wall.

The Punjab chief minister, Mr. Surjit Singh Barnala, today however admitted that there were lapses in the security at the PAP complex and said these would be set right.

Mr. Barnala said no action had been taken as yet. Asked if any inquiry was being conducted, he said all senior officials were present in the complex. It was not known from which gate the miscreants entered. He said he had not held talks with the Centre on this issue so far.

Security forces also recovered contraband gold worth Rs. 18 lakhs.

The Amritsar police superintendent, Mr. H.K.S. Kahlon, said a belt containing six gold bricks was recovered from a drain by the Border Security Forces yesterday. He said the BSF started searching the drain following the recovery of the body of a notorious smuggler on Friday.

Islamabad (AFP): Pakistan has never trained Sikh or other terrorists, and has no intention of interfering in the internal affairs of any country including India, Pakistan's minister of state for foreign affairs, Mr. Zain Noorani told Parliament.

Mr. Noorani was responding to a motion in the senate seeking to discuss reports that the person who fired shots at the Prime Minister, Mr. Rajiv Gandhi, last week had said he was trained ih Pakistan. The minister said any such allegation was baseless.

/9274
CSO: 5650/0032

INTERNATIONAL DIALING EXTENDED TO 254 TOWNS

Bombay THE TIMES OF INDIA in English 3 Oct 86 p 5

[Text] COCHIN, October 2: The international subscriber dialling (ISD) facility has now been extended to 254 towns in India with the inauguration of the facility at 20 towns in Kerala on Saturday last.

A high-power working group was appointed in December 1985, to look into the extension of ISD facilities when these were available only from New Delhi, Bombay, Calcutta and Madras. Only six countries could be dialled from these cities.

The number of countries to which the ISD facilities were available was subsequently increased to 14.

According to information from the United States, the calls received in the U.S. within the first week of introducing ISD were 140,000 paid minutes.

During the same period, booked calls numbered 80,000 paid minutes.

Dr. P. N. Choudhury, member, technology, telecommunications, said the income thus accrued from ISD calls to the U.S. in the first week since August 14 worked out to between Rs. 6 and 7 lakhs per day.

Already 38 towns in Kerala have this facility, which will shortly be extended to Calicut, Cannanore and Badagara.

The countries to which direct calls could be made now from India are Australia, Austria, Belgium, France, Hong Kong, Italy, Japan, Malaysia, Netherlands, West Germany and Turkey.

In the next phase, Zimbabwe, Iceland, the Seychelles, Gibraltar, Luxembourg, Tonga, Papua New Guinea, Portugal and Hungary, would be added to the list.

The first ISD facility was opened in India in 1975, between Bombay and London.

Dr. Choudhury said the department was aware that most overseas calls from Kerala were to the Gulf countries.

Yet, until the Bombay-Sharjah underwater cable link was commissioned by mid-1987, the ISD facility to those countries would have to wait.

/9274
CSO: 5550/0016

INDIA

HIMACHAL PRADESH TRIBAL AREAS TO BE LINKED BY SATELLITE

New Delhi PATRIOT in English 27 Sep 86 p 5

[Text] **Kalpa (HP), Sept 26 (UNI)**—After centuries of isolation, tribal areas of Himachal Pradesh will soon be linked with the rest of the country via satellite.

These areas which depended on a few wireless stations for transmission of their messages for just a few hours everyday, will now have two earth stations to link them to the satellite.

This facility will greatly increase accessibility of these areas which remain cut off for more than six months in a year on account of rain and snowfall.

While the earth station here will be operatable by the end of this year, bringing Kinnaur district on the country's telecommunication map, the earth station at Keylong, headquarters of Lahaul-Spiti district, is expected to be commissioned by the middle of next year.

With the work for establishment of the earth stations, the telecommunciation authorities have simultaneously taken steps for automatic exchanges at Kalpa and Keylong, which will bring these places on the national subscribers trunk dialing (STD) circuit.

Telecommunications (north-west) circle general manager A K Chaudhury, who visited the tribal areas, told a group of newsmen that these parent exchanges would act as a nucleus to extend the telephone facility to a large number of villages by creating a network of long-distance public call offices.

He said the telecommunciation services in the tribal areas would be highly subsidised considering the huge investments involved in the setting up of the earth stations, each costing Rs one crore, and laying of lines in the difficult hill terrain.

The tribal areas have also been exempted from the commercial norms for the opening of new exchanges in order to provide them telecommunication services as a "social obligation".

/9274
CSO: 5550/0011

INDIA

PARALLEL TELECOM NETWORK PLANNED FOR BUSINESSMEN

Bombay THE TIMES OF INDIA in English 3 Oct 86 p 10

[Text] BOMBAY, October 2: The Department of Telecommunications has finalised a feasibility study for the setting up of a parallel telecommunications network for trade and industry. Termed as Business Subscribers Network (BSN) and codenamed Vikram, the network is planned to be operational in the four metropolitan cities by end of 1988 and thereafter in eight other industrial towns.

The four metropolitan cities will be connected by satellite and the other cities by microwave. Special digital exchanges will be imported for the purpose. Giving these details at a meeting with the Confederation of Engineering Industry here on Wednesday, Mr. P. K. Roy Chowdhry, deputy director general of the department, said that further details of the scheme would be worked out only after knowing the response from businessmen.

Under the system, he said, a subscriber would be connected by radio linkage for voice and data to the main transmission centre in each city. The cities in turn will be interlinked by satellite and microwave. Industrial users in backward areas/ rural areas can also hook into this network using low cost earth stations.

Mr. Roy Chowdhury said the network is mainly intended to facilitate data transmission, teletext, videotext, facsimile and have less emphasis on voice transmission. It can also be used for computer networking and electronic banking. While the tariff structure is yet to be worked out, indications are that it will be in th region of 1.5 times the rates on the existing network.

Mr. Roy Chowdhry said that initially the system will have 5,000 subscribers which will be gradually increased to 20,000. At a later stage, the network system is proposed to be changed into a corporation, he said.

The total capital investment per subscriber terminal will be between Rs. 2 lakhs to Rs. 2.5 lakhs, including Rs. 1 lakh for the radio link. The deposits will either get normal interest or get tax deduction.

The network will be upto the building of the subscribers and the system within the building will have to be installed by the subscribers. Intercommunication from this network to the existing P&T network will be possible but not vice versa. Subscribers can also have a mobile set for the purpose within a radius of 8 km.

It is expected that in the new network there will be little scope for tampering of the system Besides, the billings will be computerised. The department has planned to make available broad band facilities after 1995. The proposed network can be hooked up to special EPABXs. The government of India CDOT technology for EPABX or any of the other manufacturers in the country do not have the required technology for the purpose and the same will have to be imported, Mr. Roy Chowdhry said.

/9274
CSO: 5550/0015

INDIA

REPORT ON MILITARY COLLEGE OF TELECOMMUNICATIONS

Bombay THE TIMES OF INDIA in English 4 Oct 86 p 17

[Text]

MHOW:

THE military college of telecommunication engineering (MCTE) here is planning induction of fibre optics communication systems into the armed forces.

"We are seriously examining the possibilities of setting up a fibre optics communication systems laboratory here," says Lt. Gen. S. L. Mehrotra, commandant of the college.

"We hope the government will allot the required funds for the laboratory in the coming financial year," he told a group of newsmen visiting the college.

COMBAT COMMUNICATION

The college imparts training to signals personnel in the field of combat communication, basic electronics, electronic warfare and computer science and technology. "Peace or war, the corps of signals has to be ever-alert and act as eyes and ears of the armed forces," Gen. Mehrotra said.

He said the college came into being on October one, 1967, as a successor to the erstwhile School of Signals which had been working as the training institution of the army in the field of electronics and telecommunications since the British period.

"This institution, thus, is as old as the military vintage of Mhow itself and has been functioning as the think tank of the armed forces."

Gen. Mehrotra said the signals officers, after completion of their three-year degree engineering course here, were awarded the B.Tech. degree of the Jawaharlal Nehru University.

COMPUTER SCIENCE

Some of the brilliant students were sent abroad for their M. Tech. degree while a percentage of them were sent for further studies to Indian institutes of technology (IITs) and the Indian Institute of Science, Bangalore.

Gen. Mehrotra said the college itself was also conducting post-graduate courses in communication engineering, computer science and systems but they were not recognised. "We are trying for the recognition of these courses."

Several friendly countries like Nigeria, Bangladesh, Iraq, Zambia, Zaire and Sudan, had been sending their service officers for "advanced communication training" here, he added.

Without keeping any fixed time schedule, students in the college are trying to improve upon every communication system. It is at the various faculties here that they have designed a number of indigenous communication systems to help the country save a large amount of foreign exchange.

"Our aim is to make the communication system totally indigenous," Gen. Mehrotra added.

The college has just concluded an electro-magnetic compatibility (EMC) and electro-magnetic interference (EMI) studies project for the department of electronics.

Col. S. K. S. Kirpekar, in-charge of the EMC/EMI faculty claimed that studies on these two subjects were carried out for the first time in the country with the help of laboratories which had been set up using computer-controlled sophisticated measuring equipment.

The college had developed two mobile laboratories which carried such equipment of different parts of the country to undertake measurements and to survey the extent of electro-magnetic environment pollution.

Col. Kirpekar said the report of the studies had now been submitted to the government.

Keeping in view the changing communication needs of the armed forces in the next century, Gen. Mehrotra said, the college had conducted two seminars during the last training year on "communications in 2,000 A.D."

MANUAL CODING

"At our faculty of computer sciences, we are trying to develop a computerised communications system to do away with the existing manual coding and decoding communication systems," Gen. Mehrotra added.

The faculty also has such sophisticated radars which can monitor Russian, Chinese, Japanese, Indonesian and INTELSAT satellites.

Besides, the MCTE is engaged in studies on integration of developing "state of art" into the communications systems, microwave and satellites communications, laser communications and manpower development in the field of computers.

The college also has an all-arms wing where officers belonging to the other wings of the army are imparted training in communication systems.

And to cater to the needs of the students, MCTE has a big library containing more than 30,000 books.

/9274
CSO: 5550/0012

INDIA

BRIEFS

WEST BENGAL TELEPRINTER PROJECT--New Delhi, 30 Sep--The Centre has issued an industrial licence to the West Bengal Electronic Industry Development Corporation (WBEIDC) Limited for manufacture of electronic teleprinters. Under the licence, the corporation will manufacture 5,000 electronic teleprinters annually which will have to be marketed under an Indian brand name. The industrial licence also specifies that the need of foreign collaboration and the financial and technical terms will be settled to the satisfaction of the department of telecommunications. The issue of licence, subject to the conditions mentioned, follows the chief minister, Mr Jyoti Basu's request to the Centre to expedite the matter during the Prime Minister's visit to Calcutta last month. The corporation had applied for the grant of an industrial licence early last year. [Text] [Calcutta THE TELEGRAPH in English 1 Oct 86 Supplement p 1] /9274

WORLD COMPUTER MEET--Bombay, 28 Sep--A conference on "Computer Communication for Developing Countries," (CCDC '87), organised by the International Council for Computer Communication and the department of electronics, government of India, will be held at New Delhi from October 27 to 30, 1987. The conference will discuss computer communication and issues relevant to developing countries. Topics such as computer and satellite communications, office information systems, message systems, teletext and videotext, fibre optics, characteristics of information society for developing world and challenges in introduction of new technologies will be covered. About 200 participants from the country and an equal number from the world over are expected. The conference will provide a meeting ground for computer specialists and technologists from both the developing and advanced countries. The participation of developing countries in the ICCC biennial conferences on computer communications had been meagre. To boost the development of information technology and computers, Computer Society of India, International Federation for Information Processing and the UNESCO had organised two international conferences Network '80 and Network '84. [Text] [Bombay THE TIMES OF INDIA in English 29 Sep 86 p 3] /9274

EXPORTED COMPUTER SYSTEMS--Processor Systems India Limited (PSI), a Bangalore-based computer manufacturer, has recently exported a large consignment of its computer systems to Software Consultants Corporation (SCC) of Tokyo. The consignment included three MC 68020 based 32-bit host systems and 90 colour graphic work stations. This consignment completes a two-year contract between PSI and SCC, a business relationship which earned India foreign exchange amounting to $500,000 net. PSI Data Systems Limited recently launched the country's first indigenously developed 32-bit computer, Psirius. Even before it was a month old on the market, the company received orders worth more than Rs 1.5 crores. This system offers novel features like separate 68000-based controllers for peripherals, an ultra-fast response link of 4000 kilobauds between the terminal and the main system, a superset of Unix operating systems and a powerful relational DZMS. [Text] [Madras THE HINDU in English 25 Sep 86 p 23] /9274

CSO: 5550/0014

PAKISTAN

BRIEFS

TELECOMMUNICATION LINKS WITH INDIA--Pakistan and India have agreed in principle to transmit the facsimiles of documents. This was stated by the zonal director of the central telecommunication region, who recently held talks in New Delhi on starting work on a direct dialing system between the two countries to enable them to establish modern communication links. [Text] [Karachi Domestic Service in Urdu 0200 GMT 19 Oct 86 BK] /12232

CSO: 5500/4702

QATAR

NATIONAL TELECOMMUNICATIONS NETWORK DESCRIBED

Dubayy KHALEEJ TIMES in English 16 Sep 86 p 2

[Article by R. Mohan]

[Text]

DOHA—Telecommunications is one sector where Qatar can rightly be proud of its achievements. Remarkable progress has been made there in the last 15 years, transforming a rudimentary system into one of the best in the world. Over 90 per cent of the country is covered by the telephone network, which offers nearly 118,000 lines.

There is hardly a country with which Qatar does not have direct telecomlink. Three satellites link Qatar with the rest of the world. Two of these are from Intelsat, one over the Indian Ocean and the other over the Atlantic. The third and the latest is the Arabsat. Qatar is among the few Arab countries which completed ground receiving station facilities to link up with Arabsat.

These satellite services are expensive, about $390 per circuit hour per satellite. Qatar also invested some $16 million towards the Arabsat project and the cost of constructing an earth receiving station is estimated at QR34 million. Qatar has three of these stations now.

Qatar National Telephone Service (QNTS) was set up in 1972 as a joint venture between the government and the multinational, Cable and Wireless (C&W). In those days C&W had a 75 per cent ownership of the venture. Since then the government has gradually increased its holding to 99 per cent. C&W and the Telecommunications Department run the international network, with the former paying three per cent royalty to the government.

International network

The international network is the only section with earns some revenue, since the domestic network is almost free. Subscribers are only charged a rental, with local calls made free. The efficiency of the telephone network was increased with the opening of a digital exhange in Khalifa Town last year. It cost nearly QR19.8 million and added to the network an initial capacity of 27,000 lines. The capacity can be increased to between 35,000 and 40,000 lines. This was the third exchange in the country and brought the number of lines available to 118,000.

It is now possible to get a new phone connection within a short time. Last year it was estimated that there were nearly 75,000 subscribers and that the demand for new connections was about 1,225 every month.

On July 15, charges for international calls were reduced by almost 40 per cent. A reduction in calls made to the countries of the Arab Gulf Cooperation Council in 1985 was about 30 per cent. Charges to Egypt, for instance, if made through the operator, decreased from QR8.30 per minute to QR7.50. If dialled directly, the charges are same during business hours, but between 8pm and 7am and on holidays, the subscriber pays only QR5.40 per minute.

The number of calls made overseas increased from 13,000 to 14,000 within about a fortnight after the reduction of charges. During the Eid Al Adha holidays, when cheap rates were charged throughout the day and the night, in the calls to all destinations were 15,000. But authorities feel that it is too early to assess the impact of reduced rates." It takes much longer to steady off," said an official.

Reduced rates also mean less revenue. An official estimated that it would require an increase of 30 per cent in the number of calls made to destinations abroad for the revenue to get to the same level as before. Authorities have noticed increasing traffic on the lines to England, Pakistan and India. Requests have been made for four additional lines to each of these countries. Additional lines are likely in a few months to England.

There are 50 international circuits that link England with Qatar, since the London exchange handles calls to other countries as well. There are 20 lines that link India, 15 to Bombay and five to Madras. Pakistan has provided 15 lines.

Authorities deny that there is a congestion on the international lines, even after 8pm when most social calls are made. More often than not it is the lack of a free line in the country called. For instance, the caller might get through to Bombay quite easily, but get stuck with busy lines beyond Bombay. A good time to call, the officials say, is early morning, when most lines are free.

After all, Qatar has to pay for those lines, 24 hours a day and 365 days of the year. The maximum number of calls from Qatar are made to the UAE, some 4.3 million minutes every year. This is followed by Egypt (2.7m) the UK (2.4m) India (1.8m) and Pakistan (1.3m). Calls to Sri Lanka are routed through London, which also takes in a number of calls to other countries.

Busiest day

Monday is the busiest day for overseas calls, since the week for business begins on that day in most countries. Similarly Thursday is a busy day here, with the caller setting things right for the next three days. Calls made to Gulf countries even out with the number received, with Bahrain being an exception. More calls are received here from Bahrain than those made from here.

However, the decline in business has brought about a general decline in the volume of calls, though figures for telephones were not immediately available. Telex calls indicate the trend. The number of overseas telex minutes in April was 157,929, with the average declining to 150,976 in the next three months. There was a slight increase in July, as might be expected since business is resumed after Ramadan.

Telex calls made within the country also declined in terms of minutes, from 70,545 in April to an average of 69,719 between April and July. Even the number of telex machines installed declined from 1,081 in April to 1068 in July. The maximum number of telex calls made are to the UK, with some 37,600 minutes used during July. Next come the UAE (22,200) the US (9,900) Bahrain (9,700) France (8,900) and West Germany (7,100).

It is Cable and Wireless again, in conjunction with the Telecommunications Department, which manages the telex service. It offers two types now, one the latest electronic machine and the other electromechanical. The electronic machines are getting more popular, with nearly 833 of them installed until July, compared to 236 of the electromechanical type.

Charges for the electronic ones are higher, about QR550 per month, compared to the QR350 per month for the electromechanical. Charges for the electronic ones which have dual script, Arabic and Roman, can go up to QR800 per month. Some of the subscribers who do not mind the noise of the old model, nor the miles of tape it spews out, stick to them. The electronic ones have such facilities as the word processor and the memory storage.

Apart from satellites, Qatar has microwave links with Saudi Arabia and the UAE. The link with Saudi Arabia was set up in 1982 at a cost of QR42 million. An addition to the telecommunication network last year was the QR25 million maritime coastal station. It is remotely controlled through an operation and receiving centre in West Bay, Doha. It helps to keep in touch with ships at sea, ensuring navigational safety.

A telephone subscriber in Qatar can send messages to any ship nearby through the coastal station. Each ship has a two-way communication link with the station when near the country. This has been a great relief to sailors in distress, particularly for those whose vessels are hit in the 'tanker war.' There are any number of cases where the sailors have called their families from aboard a ship, thanks to the modern coastal station.

One of the chief beneficiaries of the modern telecommunications setup has been the television and radio station.

Satellites have brought about a big change in the quality of the programmes, though the emphasis is on local programmes, particularly in the Arabic channel. In a programme screened recently, TV personnel recalled the days when they had to struggle to put out an English news service of about 10 minutes every day. Films were then received by air, which meant collecting them from the airport and then editing them laboriously. Satellite beams have made that unncessary.

The English channel for instance receives three film feeds a day, starting 2pm, two from Brussels and one from London. Needless to add this helps news coverage enormously. Viewers in Qatar have also been treated to live telecasts of Olympics and the World Cup.

Now that Arabsat is available, TV authorities expect increasing coordination with other Arab TV stations in news and feature programmes.

Satellites have resulted in better telex, teleprinter and telefax services. Qatar has introduced data post system to 36 countries. It is linked with 14 countries through electronic post, which is a better version of telefax. Qatar is the fifth country in the world to have this facility.

All this progress was possible because of a five-year plan launched in 1979-80. The total cost of the plan was then estimated at QR340 million.

/9317
CSO: 5500/4502

SWEDES PROVIDE TELECOMMUNICATIONS NETWORK

London AFRICA ECONOMIC DIGEST in English 27 Sep 86 p 13 of the AED Special Report supplement

[Text]

Sweden's **Ericsson Network Engineering** and **Skanska** have won a SKr 600 million ($87 million) contract to install a sophisticated telecommunications network for **Nigerian National Petroleum Corporation (NNPC).**

The system, following the route of crude oil and product pipelines for 940 kilometres from Lagos to Benin and from Warri to Kaduna, will use the latest technology including fibre optic cable, to provide a substantial capacity for data communications, signalling and telefax messages the full length of the pipeline network. It will play an important role in monitoring quantities of oil in the pipeline and allow service engineers to transmit and receive verbal and written messages.

The project — under discussion for at least five years — finally got the government go-ahead two months ago, an Ericsson spokesman told AED. The contract was signed in early September and completion is scheduled for September 1988. NNPC will be making cash payments to the contractors.

Skanska will undertake the civil engineering works, including laying the cable and erecting administrative buildings and equipment shelters. Ericsson, in conjunction with local **L M Ericsson (Nigeria),** will supply and install the fibre optic cable, radio relays, transmission equipment and 12 digital telephone exchanges. Ericsson has already started work, the spokesman adds.

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CSO: 5500/17

NIGERIA

BRIEFS

NNPC ORDERS TELECOMMUNICATIONS NET--Ericsson and Skanska together have received an order from Nigeria worth 600 million kronor. The order is for a private telecommunications network for the state-run oil company NNPC along a 900-km pipeline between Lagos and Kaduna. The order is evenly divided between the two companies and installation work will begin this fall. The entire project is to be complete by September 1988. [Text] [Stockholm DAGENS NYHETER in Swedish 8 Sep 86 p 14] 9336

CSO: 5500/2738

U.S.-ISRAELI AGREEMENT ON RADIO RETRANSMITTERS SCORED

'Ideological Sabotage' Claimed

LD011832 Moscow TASS International Service in Russian 0844 GMT 1 Aug 86

[Text] New York, 1 Aug (TASS)--TASS correspondent Maksim Knyazkov reports: With Israel's assistance the Reagan administration has taken a new step aimed at extending its ideological sabotage against countries of the socialist community and the Arab peoples.

A ceremony to initial a U.S.-Israeli agreement, in conformity with which 16 retransmitting stations will be opened on Israeli territory in the near future, to service such subversive radio centers as "Voice of America," Radio "Liberty" and Radio "Free Europe" has taken place in Jerusalem in the presence of U.S. Vice President G. Bush.

Observers are pointing out that an important role in stepping up the psychological war not only against socialist countries is being assigned to the new installations. The radio stations "Voice of America," "Liberty" and "Free Europe" are mouthpieces for the forces of Zionism which are using them to expand hostile propagandist activity against Arab states.

Washington intends to spend at least $200 million on this project which has become further proof of the strategic alliance between Washington and Tel Aviv which is getting stronger. This is only a part of the means that Washington allocates for the conduct of a psychological war that is to secure its imperial claims through propaganda. Thus, Washington has already allocated $1.3 million to modernize the "Voice of America." Those on the banks of Potomac are sparing no means also to provide such CIA brainchildren as radio "Liberty" and radio "Free Europe" with the latest equipment. The administration has requested for them $167.5 million in fiscal year 1987. The stream of lies splashed out by these mouthpieces of the "cold war" is also steadily increasing.

BROADCASTING Magazine Cited

LD220914 Moscow TASS International Service in Russian 0338 GMT 22 Aug 86

[Text] New York, 22 Aug (TASS)--Correspondent V. Kikolo reports:

Official Washington, which is mercilessly saving on the needs of ordinary Americans, displays true generosity when it is a matter of the need to expand ideological subversion against the USSR and the other socialist countries. According to the Magazine BROADCASTING, influential members of the U.S. Congress and the Reagan administration have assured the leadership of the International Broadcasting Council, under whose formal jurisdiction are the subversive radio stations Voice of America, Liberty, and Free Europe (RL and RFE), that it will encounter "no difficulties with regard to funds" which will be required for the construction of a powerful retransmission complex in Israel for broadcasting to the Soviet Union.

And the funds needed, the magazine notes, are not small--between 200-300 million dollars. According to the agreement initialled by Washington and Tel Aviv, it is planned to build 16 transmittors in southern Israel, each of them with 500 kw power. This, as BROADCASTING points out, is "the most powerful transmission complex in the West" and will be used on an equal footing by the RL and RFE, which are waging psychological war against the USSR, socialist countries of Eastern Europe, and also against Afghanistan and the states of East Africa. The first $40 million are to be allocated for these purposes this autumn.

In connection with this they note here that for the modernization of Voice of America alone, the Reagan's administration already has allocated $1.3 billion. As far as Liberty and Free Europe are concerned, Washington intends to grant them $167.5 million in the next fiscal year.

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CSO: 1807/32

TV COOPERATION PROTOCOL SIGNED WITH FRG

OW091126 Moscow Television Service in Russian 0045 GMT 9 Oct 86

[From the Novosti Newscast]

[Text] The USSR State Committee for Television and Radio Broadcasting and FRG's second television program ZDF signed a working protocol on cooperation in the field of television for 1986-87 in Moscow on 8 October. The document was signed by Comrade Kravchenko, first deputy chairman of the USSR State Committee for Television and Radio Broadcasting, and ZDF Director General Stolte.

[Video shows signing ceremony and Stolte speaking to camera] This agreement is of great importance for both organizations. First of all it concerns television days, and today we agreed on the organization of these days. A ZDF day will be held on the USSR State Television and Radio Broadcasting System and Gosteleradio Day will be held on the ZDF television system. I am certain that cooperation will be continued in the form of exchanges of camera groups, programs, and direct broadcasts. I am happy that I had the opportunity of signing this agreement today.

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CSO: 5500/1006

FRENCH CNET, ENST R&D PROGRAM ABSTRACTS

[Editorial Report] Paris L'ECHO DES RECHERCHES in French in its 1986 second quarter issue presents the English-language abstracts appearing below. "The articles published in L'ECHO DES RECHERCHES present studies carried out in CNET [National Center for Telecommunications Studies] or in the ENST [National School for Advanced Telecommunications]."

"Thin-layer transistors for addressing of liquid crystal flat panel", by M. Le Contellec, F. Morin, and F. Richou; pp 5-14

"Liquid crystal flat panels are now beginning to be available on the market, especially in the micro-computer business. Yet, they still lack in contrast, and their angle of view is inadequate, which accounts for the fact that they cannot compete with the rather cumbersome but high-quality cathode ray tube.

"Around the world, many laboratories are presently seeking to replace multiplexed addressing, traditionally used with this kind of panel, by another form of addressing using an active electronic element for every pixel.

"Taking advantage of the widespread efforts made in connection with the research for amorphous silicon solar cells, dramatic progress has been achieved towards mastering this material. This paper describes how to create a so-called 'thin-layer' transistor made of hydrogenated amorphous silicon on a glass plate in order to make a liquid crystal flat panel controlled by a matrix of such transistors."

"Design and assessment of access dialogues for telephone services", by J.-Y. Jegou, J. Damay, and G. Brillet; pp 15-22

"Over the last ten years, there has been persistent diversification of telecommunication services and terminals, a trend which is bound to be confirmed with the advent of the ISDN. Since adoption of these services by the users is highly dependent upon the dialogues used to access them, CNET has chosen to carry out specific studies which should begin at the stage of application design. These studies are based on an optimisation process from initial definition of the service until it is marketed. A special dialogue simulation tool was designed for laboratory experiments which have a very important role to play in this process. Among other things, it has been used to study the control dialogue for the RENAN digital telephone terminal."

"A 64-kbit/s digital frame for multimedia services", by J.P. Temime; pp 23-26

"This paper describes a method to multiplex on the same 64 kbit/s digital channel, several information flows such as sound, pictures, data or user-user signalling.

"This digital frame was first introduced within the 'CEDRE' Project on teleconferencing, and was then adopted by the CEPT as a recommendation for all multimedia applications. It was also approved by the CCITT for teleconferencing and will be adopted for all interactive audiovisual services."

"Network economics: the transformation of telecommunications", by N. Curien and M. Gensollen; pp 27-32

"Telecommunications are currently undergoing far reaching changes, not only at technical level, which have an impact on many areas: marketing, with the gradual introduction of more efficient charging systems; organisation, with the issue of how far is the monopoly to extend in order to prevent a chaotic situation from developing; economics, the development of new services changes the role of telecommunications in the hierarchy of communication services and industries.

"This paper offers a reference framework for the carrying out of an economic analysis of these changes and provides bases for the political decisions to be taken."

"Cryptography and smart cards", by M. Girault, A. Bauval, and M. Campana; pp 33-46

"A number of problems related to teleinformatics security can be solved by using cryptographic processes. After an introduction, this paper discusses the basic notions involved in modern cryptography, and presents the most frequently used algorithms. The authors then describe how these algorithms may be implemented for existing or planned electronic payment applications using smart cards. The last section gives a more prospective outlook of one of the CNET's latest projects designed to provide a very high level of security where needed for future applications."

"Metal-base transistors", by E. Rosencher; pp 47-58

"The operating speed of current electronic components is chiefly restricted by the access resistor to the control electrode. The progress achieved in the field of epitaxy has now made it possible to make transistors whose metal base gives a resistivity of up to a hundred times less than that of transistors using doped semiconductors. In this paper, we shall describe the production techniques, and the operating principles of this new class of device: the SMS, or Semiconductor/Metal/Semiconductor transistor, and the TBP, or permeable base transistor."

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CSO: 5500/A002

LUXEMBOURG

BRIEFS

LUXEMBOURG'S ASTRA SATELLITE--A new competitor is threatening the future of the French direct broadcast television satellite TDF-1, scheduled for launch when Ariane is healthy again. ASTRA, financed by a group of European stockholders, including the Grand Duchy of Luxembourg, is scheduled to be launched during 1987 and will be put into the geostationary orbit assigned to Luxembourg. ASTRA benefits from the latest technological developments making its performance and price very competitive compared to TDF-1 and to its German counterpart which were designed 7 years ago. Thus, it will broadcast 16 channels initially and 32 channels later, compared to only 5 for TDF-1, and each channel will rent for Fr 37 million compared to Fr 100 million for the French satellite. Obsolete even before launch, TDF-1 is likely to have serious problems renting its channels. Transmitting rights for TDF-1 granted by the previous government to the Berlusconi-Seydoux-Maxwell-Kirsch consortium have now been canceled. It will be difficult to attract new business in view of the Luxembourg satellite's considerably lower cost. [Text] [Paris SCIENCES ET AVENIR In French Jul 86 p 12] 25047/12948

CSO: 5500/A211

ERICSSON CLOSING FACTORY, CUTTING JOBS AT OTHER PLANTS

Stockholm DAGENS NYHETER in Swedish 3 Sep 86 p 14

[Article by Goran Jonsson]

[Text] When Ericsson closes its plant at Kungens Kurva in Stockholm, 300 people will lose their jobs. In Ostersund 100 people will lose their jobs and in Soderhamn 200 people will be effected by cutbacks in Ericsson's main sphere of activities, telecommunications.

This is management's plan, which will be presented to employees on Tuesday afternoon. The intention of management is to reduce the number of employees within the Ericsson Concern by a total of 4,800 persons, 2,800 of whom are in Sweden.

Yesterday negotiations began in accordance with the Codetermination Act on management's plans for the telecommunications sector in which 2,800 jobs will be eliminated, 1,800 of which are in Sweden.

All Jobs Lost

As expected, it is the Stockholm region that will be hardest hit by the cutbacks. Virtually all 600 white-collar jobs will be eliminated in Stockholm, especially at Ericsson's main office at Telefonplan in southern Stockholm. In addition, the plant at Kungens Kurva will be closed in 1987. The component plant in Bollmora, which now employs between 500 and 600 workers, will also be closed. Neither organized labor nor company management would comment on how many people would be affected by these cutbacks.

In addition to all this, there are the cutbacks within Ericsson Information System that were announced last Friday. This will result in the loss of about 350 jobs at the plant in Barkarby when the production of picture tubes and keyboards is move to Blekinge.

Labor's Approach

"I am almost convinced that the white-collar workers in the Stockholm can find new jobs," said Berndt Safstrom, chairman of the SIF (Swedish Industrial Salaried Employees Association) local at the parent company in Stockholm.

"But if an entire plant is shut down it may be difficult," Berndt Safstrom said.

The position of organized labor in the negotiations will be to propose measures to reduce costs in some other way than to reduce the number of jobs.

"We believe that much can be done within the organization. We must try to lower costs for storage and accounts receivable and find areas within the concern in which we can work together to keep costs down. I hope that no layoffs will be needed," Berndt Safstrom said.

According to management's plan, about 1,000 jobs will disappear by so-called natural attrition. But is that really a reasonable figure?

The Plan

"I cannot imagine that this will be possible. This figure must also include transfers and even early pensions," Berndt Safstrom said.

The main points in management's efficiency plan to improve slumping profits are listed below.

Ostersund: A restructuring will take place in 1987 to form an "industrial hotel," which means that the three main areas of interest within the Ericsson group will be housed under the same roof. The changes will mean a personnel reduction of 100 employees down to a level of 500.

Soderhamn: 200 persons involved in the production of power supply equipment for personal computers and other devices will lose their jobs. The Soderhamn plant sells its products to internal customers. Ericsson Information Systems, which is reducing its personnel by a total of 2,000 employees, is a major customer. The number of employees at Soderhamn will be reduced from 900 to 700.

Kungens Kurva in Stockholm: The plant will be shut down and 250 production workers and 100 white-collar workers will lose their jobs. This plant produces fiber optics products. This production will be transferred to the Norrkoping plant.

Natural Attrition

In addition to these three plants, Ericsson has nine more factories in Sweden with production in the field of telecommunications. At an unknown number of these plants, activities will be reduced gradually through natural attrition.

Production of the AXE system will not be affected by any cutbacks. Eighty percent of the company's public telecommunications division has some bearing on the production of components for the AXE system.

9336
CSO: 5500/2738

SWEDEN

BRIEFS

ERICSSON WINS FIBER OPTICS ORDER--Ericsson Telecom has landed an order from the Telecommunications Service. The order involves digital fiber optic transmission equipment for the telecommunications network. The order is worth 100 million kronor. [Text] [Stockholm DAGENS NYHETER in Swedish 9 Sep 86 p 14] 9336

CSO: 5500/2738

END

JPRS-TTP-86-028

25 NOVEMBER 1986

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH, AND DEVELOPMENT

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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Effective 15 December 1986, the JPRS serial EUROPE REPORT: SCIENCE AND TECHNOLOGY will be entitled EUROPE/LATIN AMERICA REPORT: SCIENCE AND TECHNOLOGY.

In addition to SCIENCE AND TECHNOLOGY material from West and East Europe, this serial will contain Argentine and Brazilian computer, fiber optics and microelectronics material currently published in the WORLDWIDE REPORT: TELECOMMUNICATIONS. Such material will no longer appear in the worldwide report. Material related to the telecommunications field in Argentina and Brazil will appear both in the WORLDWIDE REPORT: TELECOMMUNICATIONS, and in the EUROPE/LATIN AMERICA REPORT: SCIENCE AND TECHNOLOGY.

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JPRS-TTP-86-028

25 NOVEMBER 1986

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HONG KONG TO LINK INTO CABLE, WIRELESS DIGITAL NETWORK

Hong Kong HONGKONG STANDARD in English 7 Oct 86 Supplement p 2

[Text]

CABLE and Wireless plc took a quantam leap yesterday towards its goal of establishing a global digital highway with the announcement that it will be a key participant in a multibillion dollar alternative international telecommunications system and service for Japan.

And Hongkong will link into the system — which will ultimately connect with the world's key financial centres, London and New York — alongside Korea, Taiwan, the Philippines, China and other Pacific Basin countries by a further network of submarine cables or private satellite.

What is even more image-building for Cable and Wireless plc, whose shares will be listed on the local stock exchange by the end of the year, is that it is the only foreign participant with a significant equity interest in the consortium formed to carry out the detailed feasibility study for the new telecommunications system.

Its 20-per-cent stake, in fact, equals that of C Itoh which is the third largest trading house in Japan.

Other participants are Toyota Motors (10 per cent); Fujitsu (three per cent); NEC (three per cent); Japanese banks IBJ, DKB and LTCB (15 per cent, between them); Hitachi (two per cent); the US-based Pacific Telesis International (10 per cent); Merrill Lynch (three per cent); and sundry other Japanese companies (14 per cent).

Talks about Cable and Wireless plc's participation began more than a year ago and a feasibility study was started last April.

It proved positive and a consortium comprising the above-mentioned companies — called Kokusai Digital Tsushin Kikaku KK — was duly formed to obtain a category 1 licence from the Japanese Government.

Given the quality of the consortium, incidentally, and the fact that the secondary feasibility study that will now be prepared will constitute the only effective tender, the alternative system to the existing KDD one seems assured of getting the necessary Category 1 licence and the various other regulatory approvals.

The broad business plan — worked out in the earlier C Itoh/Cable and Wireless study — is for a leased circuit service via Intelstat and existing Pacific cables by the end of next year with switched services forming phase II, which will begin in 1989 and a full range of digital leased and switched services via PPAC submarine optical fibre cable jointly owned by KDTK (Japan) and Pacific Telecom Cable of the US beginning in 1990 for phase III.

Phase IV will see the connection of Japan with Hongkong and other regional centres.

The consortium is unique in terms of Anglo-US cooperation with the Japanese and provides a potent reinforcement for Cable and Wireless plc's plans for a global digital highway.

It also underlines how serious the governments of Britain, America and Japan are in their policies of liberalisation and privatisation.

Cable and Wireless plc's global highway presently consists of four key elements:

- Mercury — the only all-digital network in Europe;
- PTAT — the planned state-of-the-art submarine fibre optic cable linking the

UK to the US owned jointly by Cable and Wireless and Tel Optik. Nynex, the New York-based RBOC, will purchase Tel Optik subject to necessary judicial and regulatory approvals.

- Cable and Wireless' digital network in the US; and
- PPAC — the planned state-of-the-art submarine fibre optic cable linking the US to Japan (and ultimately Hongkong), owned jointly by Pacific Telecom Cable of the US and the new Japanese consortium subject to acquiring the relevant licences.

Funding details have still to be worked out but the Japanese leg of the global digital highway will probably cost around the US$500 million mark.

In addition to the stature that Cable and Wireless plc indubitedly gains from its inclusion in the new KDTK consortium, it also sheds more light on the rationale behind the recent decision to list its shares on the Tokyo stock exchange earlier this year, followed by Hongkong and various other key world bourses by the end of 1986.

/12104
CSO: 5550/0017

SPAR SIGNS CONTRACT TO BUILD TWO TELESAT SATELLITES

Toronto THE GLOBE AND MAIL in English 18 Oct 86 p B6

[Article by Robert Gibbens]

[Text] Spar Aerospace Ltd. of Toronto has been awarded a $180.5-million contract to build two communications satellites, Anik E1 and Anik E2, for Telesat Canada.

The two dual-band satellites are to be completed by 1989 for launch in 1990. Spar, as prime contractor, can also earn an extra $20.5-million in incentives during the 10-year lifespan of the satellites if certain performance objectives are met.

They are designed for the North American communications market, said Eldon Thompson, Telesat president. Including ground equipment and the cost of launching and insurance, the total cost of the Telesat project is between $450-million and $500-million.

Each of the satellites will carry the equivalent of 56 television channels, and together they will meet Telesat's capacity needs from 1990 to 2000. "We will be launching two of our current satellites at one time, with a cost saving of about 35 per cent," Mr. Thompson said.

Telesat has six satellites in orbit, including one in storage orbit and one to be retired later this year. The company will finance its latest satellite venture through normal commercial sources.

Spar will carry out the design, manufacture and installation of the communications payload at its Ste-Anne de Bellevue plant in Quebec, just west of Montreal, while the RCA Astro Electronics Division of New York-based RCA Corp. will provide the basic spacecraft components. RCA's input will represent about $70-million, and the work of other U.S. subcontractors about $15-million.

The satellites will probably be launched by one of two commercial carriers in the United States, because of their greater experience, Mr. Thompson said.

Don Pollock, Spar president, said the company hopes to find commercial markets abroad for the Anik E-type satellite. It could be suitable for certain Latin American countries, Europe, Nigeria and China. Spar has sold satellite systems to Brazil, and is negotiating with Nigeria and China.

/7358
CSO: 5520/2

BRIEFS

NEW WARSAW TELEPHONE EXCHANGE--As part of the drive to modernize Warsaw's telephone communications center startup engineering work has begun on a state-of-the-art transit exchange located on Francesco Nullo Street. This facility has been equipped with electronic hardware manufactured by the Teletra firm of Poznan based on a French license purchased from CIT-Alcatol. This exchange has 3,000 telephone connections and will serve residents of Warsaw, in addition to working in tandem with the major subscriber exchanges of central government offices such as the Sejm, the Office of the Council of Ministers, and the Planning Commission. Tadeusz Witold Mlynczak, chairman of the Democratic Party Central Committee, received a briefing on this new telephone exchange and on plans for the Warsaw telephone system in the immediate future. [Text] [Warsaw ZYCIE WARSZABY in Polish 17 Oct 86 p 2] /9738

AUTOMATED DIRECT-DIAL PHONE SYSTEM--Kielce will soon become the seventh city in Poland to have an automated international and intercity long distance telephone exchange system called ACMM [automatyczna centrala miedzymiastowa i miedzynarodowa]. The system is scheduled to go into service during the first week of October 1986. With the help of this advanced technology, the residents of Kielce, Skarzysko, Starachowice and other cities in Kielce Voivodship will be able to place direct-dial calls to about 1500 places inside Poland as well as 14 countries, including Belgium, Greece, Hungary and the USSR. Callers can gain access to ACMM by dialing "0". Information pamphlets about international and intercity dialing (30 thousand copies are being printed at a price of zl 50 each) are already on sale at the Kielce 1, Skarzysko 5, and Starachowice 1 post offices. For example, a one-minute call to Greece will cost around zl 110; a call to Hungary for the same length of time will cost half that toll. [Text] [Kielce SLOWO LUDU in Polish 23 Sep 86 p 5] /9738

CSO: 5500/3003

NATION'S FIRST CABLE TV NETWORK NEARS REALITY

Hamilton THE ROYAL GAZETTE in English 23 Sep 86 p 1

[Text]

Bermuda Cablevision is at last on the verge of establishing Bermuda's first cable TV network.

The company has secured a $5 million loan and received copyright clearance to show up to 21 channels on a cable system, according to company president Mr. Gavin Wilson.

And after years of unfulfilled promises and stumbling blocks, the company should be ready for ground-breaking by the beginning of December.

Mr. Wilson said yesterday he will tell the company's 570 shareholders at an October 6 general meeting in the Chamber of Commerce offices where the company stands.

"Certain events have taken place which mean we can now go back to the shareholders," he said.

"We have secured a $5 million loan from the First Bank of Minneapolis," he said. "And we now have an agreement with the the Motion Picture Association of America which means we can now show the programming of copyright holders represented by the MPAA.

Mr. Wilson said the agreement gives the company the rights to show the programming of 21 channels — 11 above the number required by Government to operate a cable company locally.

Mr. Wilson has also negotiated the rights to show two cable channels already available in Bermuda through DeFontes Broadcasting — *ESPN* and *Cable News Network*.

Mr. Wilson said this should not create any problems because the rights are non-exclusive.

"The biggest thing is to have the agreement with the MPAA," he said. "No similar agreement exists anywhere else. Not in Mexico, not in Canada and not in the Caribbean or anywhere else."

He said the MPAA had told him the directly-negotiated agreement was a precedent in the Western Hemisphere and could pave the way for other agreements in the Americas.

It is believed to be modelled on an agreement negotiated between a Dutch company. The MPAA receives two percent of the company's revenues and distributes them to its members.

Bermuda Cablevision was invited by Government in October, 1985, to submit a bid to operate a cable TV company in Bermuda providing it had copyright clearances, similar operating standards to US and Canadian companies and a solid financial base.

With the copyright clearances and the funding from the American bank, Mr. Wilson now appears close to fulfilling his aim.

Mr. Wilson said last autumn he hoped to have the system on line by this summer.

He said yesterday: "We expect to have all our ducks in a row by November 15.

"We are looking to start ground-breaking by the beginning of December," he said. "But this is a loose target. We've got to be flexible. You never know if a natural disaster is going to strike."

Mr. Wilson said the company has complied with Government's major requirements.

Unlike the company's earlier efforts to establish a cable network, Mr. Wilson said Government has been kept up to date on developments and the two bodies have worked closely together.

"We have a nice line-up," Mr. Wilson said.

/9274
CSO: 5540/014

GOVERNMENT TURNS DOWN PROPOSED CABLE TV SCHEME

St Georges THE GRENADIAN VOICE in English 6 Sep 86 p 3

[Text]

Government have turned down a proposal of a company known as Payvision Ltd. to establish a cable T.V. Station in the state to serve patrons with a minimum of 8 channels initially - including ABC, NBC, CBS, CNN (News) and, possibly, BBC, and one channel for public use.

The proposal included offers of free cable connections and free T.V. sets to such places as schools, hospitals, fire and police stations and homes for the aged.

Writing the Prime Minister in January, the company which provides cable television service to certain other islands in the caribbean, the company requested a 10 year income tax holiday, exemption from import duty for all equipment and materials and a 15 year exclusive cable television franchise with two five year renewable options.

In return the company offered the Government the first Right of Refusal to purchase the system after the fifteen year or subsequent period, a reinvestment of 20% of Payvision Ltd.'s net profits into the Grenada economy, 5% equity to the Grenada Government or 5% of the net profits per annum and payment of rental of US$5.00 per annum for every pole used as part of the cable system.

The company said that in conjunction with the Ministry of Education it would bring educational programmes to the schools as deemed necessary by the Ministry.

The charge to residents for the service was quoted as US$20. pert month plus a one time installation fee of US$10.00 and a US$20.00 refundable security deposit.

The company said it would post a performance bond in the sum of US$50.000 to guarantee startup within 120 days of the date of execution of the agreement.

/9274
CSO: 5540/015

TV NEWS EXCHANGE PROGRAM WITH BARBADOS CANCELLED

Port-of-Spain TRINIDAD GUARDIAN in English 11 Oct 86 p 1

[Article by Jerry Johnson]

[Text]

THE NEWS exchange programme between Barbados and Trinidad and Tobago has been cancelled because Trinidad and Tobago Television (TTT) was not getting value for its money.

So said TTT's General Manager, John Barsotti, when contacted yesterday. The programme started in January this year as a test of intra-regional news exchange and was sponsored by INTELSAT. Jamaica promised to be part of the exchange, Mr Barsotti disclosed, but never joined.

TTT, however, went ahead with the Barbados exchange until October 3 when INTELSAT discontiuned the sponsorship, saying it had not heard from the other Caribbean countries. Mr Barsotti said TTT was prepared to continue until October 10 but the company was not getting quailty programmes from Barbados.

Lennox Worrell, General Manager of TEXTEL, called the removal of the news exchange programme unfortunate and a retrograde step, especially when public opinion was on the side of increased local and foreign content on television.

Mr Worrell spoke of some Lesser Developed Countries which were exposed to 24 hours of cable and the deleterious effect it was having on local consumption. He said advertisers there were no longer promoting local goods. Instead, they were simply packing their shelves with the foreign products that consumers are bombarded with all day.

Striking A Balance

TEXTEL's General Manager said that the argument was not to do away with foreign content in the media but to strike a balance with increased local and foreign programmes. Mr Barsotti said TTT also supported that contention and he hoped the matter would be approached seriously at the next Caribbean Broadcasting Union meeting in November.

He said he was very willing to be part of the exchnage again. But it must involve at least three countries and the quality of the programming, including TTT's, must be up to standard. With the help of TEXTEL which has done its part, Mr Barsotti said, it was now easy to exchange quailty programming like the Steelband Music Festival. Indeed, Mr Barsotti disclosed, there was an individual from Jamaica who was interested in the festival. But of course, Mr Barsotti added, TTT would have first to clear the rights with Pan Trinbago.

/9274
CSO: 5540/016

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/9274
CSO: 5540/016

LUSINCHI EASES REGULATIONS, BROADCASTERS COMMENT

PA252139 Caracas Television Service in Spanish 0001 GMT 25 Oct 86

[Text] Beginning today, television stations will be able to enter contracts for satellite broadcasts directly, without going through CANTV [National Telephone Company of Venezuela]. The announcement of this total liberalization of satellite broadcasts was made by Venezuelan President Jaime Lusinchi in an address to television station directors.

[Begin recording] [Transport Minister Pedro del Moral; in progress]...to the Venezuelan Government's desire to open all kinds of possibilities and freedom so Venezuelan television will include international coverage, especially in the Caribbean, which is in Venezuela's sphere of influence, and in the border zones, which play a key role in development. That is the government's sentiment. We believe it is very important to the social and economic growth of the country.

[CANTV President Jose Luis Espinel] This will make it possible, as announced earlier, to have television reception antennas at home for private use. Also beginning today, private television companies will have that same opportunity. In this context, Channels 2 and 4, as well as the state television stations, will be able to receive television signals via satellite using their own equipment, whether by purchasing or leasing satellies. They will also be able to use the telephone company's system.

[Channel 2 Director Eladio Lares] The measure the president has adopted is important for the industry. We, as Radio Caracas Television and as part of the industry, were eager to see it go through. Radio Caracas was the first to engage in this activity. As you recall, our receivers allowed Venezuela to see men walk on the moon. We were the first to bring the world to Venezuela. As a representative of the television industry,I believe this is very important. I am proud of this historic step.

[Channel 4 Director Jose Rafael Revenga] This implies overcoming the technical backwardness or technological isolation we were in. Our windows to the world were closed. The president has allowed us to open them.

[Reporter] From an eonomic stand point, will this not be a burden to the television stations?

[Revenga] We do not have specific estimates. However, I believe the costs will be comparable to those established by CANTV. [end recording]

/6091
CSO: 5500/2007

BRIEFS

HOURLY NEWS BULLETINS--Radio Pakistan will broadcast hourly news bulletins from 0600 to 2300 [0100 to 1800 GMT] beginning tomorrow, Saturday [1 November], to keep the people informed of the affairs. A total of 12 Urdu and 6 English news bulletins will be broadcast. The number of news bulletins in Punjabi, Sindhi, Pashto, and Baluchi languages is also being increased from three to four. [Text] [Karachi Domestic Service in Urdu 0200 GMT 31 Oct 86 BK] /9738

CSO: 5500/4703

FUNDS GRANTED TO IMPROVE RADIO TRANSMISSIONS

Kaduna NEW NIGERIAN in English 25 Sep 86 pp 1, 3

[Article by Chris Dada Thomas]

[Text] **FEDERAL Government has approved a special grant of 7.74 million Naira for the Federal Radio Corporation of Nigeria (FRCN) for the rehabilitation of its transmitors and other facilities.**

The Director-General of the corporation, Malam Dahiru Modibbo, said in Lagos yesterday that as soon as the funds were released it would be used to import spare parts needed to improve the services of the establishment.

Malam Dahiru, who was briefing the Minister of Information and Culture, Mr. Tony Momoh who was on a working visit to the FRCN, said more than a half of the corporation's equipment had broken down while those functioning operated at very low capacity.

The five main transmitters of the External Service were shut down due to lack of spare parts while the education service transmitters had been off the air for nearly two years.

The director-general said FRCN as currently constituted had tremendous potentials which had not been exploited.

He said if the corporation had been given the necessary facilities and the intentions of the FRCN decree directly understood and applied, it would have had greater impact by now than it had been able to achieve.

Malam Dahiru said each of the 15 Nigerian languages service and four English services in the zones could have operated for 18-20 hours daily.

He said the corporation priority request for the next development plan were to re-equip existing stations, provide multi-channel capacity for both Enugu and Ibadan to bring them up to the level of Kaduna.

/9274
CSO: 5500/18

MODERNIZATION DIGITIZATION OF COMMUNICATIONS SEEN 'TOO COSTLY'

Lagos THE AFRICAN GUARDIAN in English 9 Oct 86 pp 21, 22

[Article by Chukwuemeka Gahia and George Ola-Davies]

[Text]

PUTTING a call through by spinning the phone dial with the forefinger is not quite the style currently judged to suit a Nigeria on the move. Nobody is saying, for now that this method of using the telephone — referred to as the analogue system — is old-fashioned as such.

Rather, Nigeria's communication planners think it is nothing compared to the digital system, in which only numbered buttons are touched by subscribers to make calls. They are convinced that the digital system is more efficient. And come January, 1987, Nigeria will join Senegal and Cote d'Ivoire (Ivory Coast) as the only countries in West Africa that have switched over to the digital system.

Work has started, in fact, pilot projects in Lagos, (Odulami primary centre, Iponri, Ikeja) Ibadan (at Bodija), and Maiduguri for the system expected to gobble up ₦464 million . Sources say the ₦78.4 million so far spent on the projects is part of a ₦500 million loan. The Nigerian Telecommunications Company (NITEL) took from the ITT in 1985 to cover execution of old and new communications projects handled by the multinational's local partners.

With this kind of money earmarked for expenditure at a time like this, the analogue-to-digital switch has come under scathing scrutiny. Skeptics range from experts who think it would amount to putting new wine into an old bottle, to the Nigerian Society of Engineers (NSE) which worries that government is literally throwing money at technological fancies. The NSE has sent a strongly worded letter to the Ministry of Communications protesting that the cost of the scheme is colossal and cannot be justified on cost-benefits grounds.

The letter says the engineers' anger partly stems from the fact that the scheme requires additional interface equipment whose costs could wipe out expected advantages,apart from compounding existing maintenance and training problems. It adds that there is little economic sense in Nigeria investing huge sums on the new technology when producer countries like the US, Japan, Britain and West Germany still use analogue system "for more than 70 per cent of their national telecommunications systems."

The engineers want the government to put its money on the existing analogue system, which, they claim, is yet to be hooked throughout the country. They say that existing telephone facilities have not even been maintained properly or "utilised to their full capacities."

What they want the NITEL to do therefore is to deliver on its earlier promise to take inventory of telephone exchanges which were purchased, but are yet to be installed under the first phase of the new telecommunications development programme. But they are afraid that their call may turn to be water poured on the back of a duck. NITEL's performance in telecommunications is hardly a success story. It was not long ago that it tried unsuccessfully to float a communications balloon (it was actually a trial balloon) project called Aerostat. By the time the project flopped, it had guzzled ₦100 million in installation fees alone. Another pet project — an idea called Domestic Satellite System (DSS) — was unable, in nine years, to meet the planned objective of up-grading network television programming.

This time around, NITEL is trying to show some caution. It is not planning to phase-out the analogue system altogether. It is going to merge the two networks — the analogue and the digital — at least, for some time.

Plans for the digital system began in January, 1985 when government set up a committee headed by Chief P.S. Kentebe, former NITEL general manager (southeast zone) to map out a "strategy for the digitalisation of the national telecommunications newtwork." The committee got a month to carry out the job, but actually took 18 months to write a report, which was submitted only recently.

It angered Communications Minister, Col. Tanko Ayuba, who regretted that the committee not only delayed the report, but also allowed its findings to leak before government even got to know about them. He said this caused a stir among firms looking for contracts, possibly leading to lobbyings by well-connected parties.

ALL the same, the administration is impressed by the advantages of the digital system (based on the Pulse Modulations-PCM-technique (which converts the analogue mode into a digital form). Unlike the analogue system, restricted to one unit say, the telephone; the digital system offers a wide range of features, including a computer-controlled unit. When equipped with digital terminals, the unit allows users to transmit texts, pictures and data in a matter of seconds.

Digital techniques make it possible for two people, conversing thousands of miles apart, to see themselves through a gadget called picturephone. Corporate board meetings, with participants at various locations in the country, can be arranged through a digital process called teleconferencing. In addition, consumers can sit at home and compare prices, if their lines are connected to supermarkets with digital facilities.

THE range of features for voice communication through the digital system include what experts call extension, operation and system units Under the extension features, there are 34 services, including a "night service" that does not operate during the day and the "follow me" mechanism which automatically redirects calls to any place the owner happens to be within a given radius at any given time.

The system features has advantages that include: correct time metering, a fire alarm unit that relates fire outbreaks to lines not in use at the time, and units for monitoring security guards and staff not at their places of work. The operator feature helps to ensure: that in-coming calls are all put on queue, the interruption of a busy line to pass on urgent messages, and that one is able to speak with a different party without the caller 'on-hold' hearing.

In all, the digital system is aimed at integrating communiction services within a single network, involving telephony, all types of data transmission, high speed, telescroping and so on. In contrast to the 110 years old analogue system, digital signals are separated in periodically repeated time slots and each speech direction has a separate channel.

In analogue transmission, the sound that comes from the voice basically travels in the form of waves that become audible at the earpiece of the receiver. It is so named because its electrical waves are a continuous replica of sound waves, and have characteristics similar to them, such as frequency. Analogue connections depend on forms of electro-mechanical switches in exchange offices that link callers.

With the digital system the process is less cumbersome. Its signals — the "O" and "I" of the binary code — are sent as sequences of on-off pulses. Digital transmission also uses optical fibres as a result of its base structure — the PCM and it's immunity to electrical charges. The analogue system, on the other hand, is badly distorted by electrical noise, interference and weak equipment.

The existing analogue system in the country has undergone a lot of changes, the most important attempt to improve it being government plan in 1975 to increase subscriber lines from 50,000 to 750,000 and replace the switching method with the step-by-step central battery and magnetic system. Contracts for the installation of telephone exchanges in 45 locations were awarded (39 of them have been commissioned). Two years later, new contracts were awarded for an additional 120,650 lines in 147 locations. So far, only 87 of the locations have been affected. Officials say the remaining 60 projects are at various stages of completion.

Government has also been working on a project to install a total of 28,500 lines in mobile stations in 35 locations, out of which only 2,000 have been commissioned in three locations. In 1981, a ₦480 million national telephone network transmission project was embarked upon to link the northern parts of the country with the south. Beneficiaries of contract included Siemens — Elec (German), Mawbeni NEC (Japan) nd ITT (American).

Code-named Phase 11A telephone transmission network the project aims at adding two alternative telephone routes to the existing route, said to be unreliable and unable to cover a wide geographical area. It is also planned to hook up all state capitals, local government headquarters, industrial towns, nd some villages.

Siemens is handling Bendel, parts of Anambra State, Sokoto, Kaduna, Kano, Niger, parts of Borno and the Federal Capital territory, Abuja — a distance of 6,000 kilometres on "microwave radio" link and 300 kilometres on 'coaxial cable' link. It completed work last year. Sources close to the company said work was slowed down on NITEL's advice.

Marubeni, whose area converage includes Oyo, Ondo, Ogun, nd parts of Anambra Stte, completed 99.77 per cent of its projects by January this year. In the same period, ITT completed 75 per cent of its contract whic covers Bauchi, Borno, Gongola, Plateau, Cross River, Imo, parts of Anambra and Rivers.

Officials of the three companies say that NITEL is to blame for the delay in completing the project by its 1983 schedule. They say it has done little to provide infrastructure for equipment now lying idle in warehouses throughout the country.

/9274
CSO: 5500/19

OVERVIEW OF EUROPEAN TELECOMMUNICATIONS INITIATIVES

Amsterdam COMPUTERWORLD in Dutch 29 Jul 86 pp 18, 19

[Article by Jan Schils: "Many New Issues Arise: European Commission Indicates Positive Developments in Telecommunications Policy"]

[Excerpts] Brussels--In a recent European Commission report to the European Council of Ministers about the EEC's telecommunications policy, Europe's "executive committee" notes that considerable progress has been made in the implementation of European telecommunications policy since the second half of 1983. The report includes a current status report in five fields of activity approved by the Council of Ministers.

In the conclusions of its late 1984 meeting, the European Council of Ministers approved the main goals of a European telecommunications strategy aimed at creating the conditions necessary for an expanded common market in telecommunications equipment, internationally competitive industrial structures, and advanced networks and services.

Five Measures

Five kinds of measures were selected to reach these goals:

1. Negotiating the development of telecommunications networks and services within the EEC and implementing joint infrastructure projects.

2. Establishing a European market for telecommunications terminals and terminal equipment.

3. Drafting a program to develop the technology necessary for the long-term construction of future broadband networks.

4. Improving the access of less developed EEC areas to the opportunities offered by the development of advanced services and networks.

5. Coordinating positions during international telecommunications negotiations.

The definition of common goals for the development of telecommunications services and networks in the EEC has been studied by representatives of network operators, industry, and the European Commission within the Senior Officials Group for Telecommunications (SOGT) and its subgroup, the Group for Analyses and Prognoses (GAP).

The results of these studies and activities of the SOGT and the GAP led to a recommendation to coordinate the introduction of integrated services digital networks [ISDN] in the EEC. This recommendation has been submitted to the Council of Ministers.

Mobile Telephones

A report has been published on second-generation mobile cellular telephone communications, which notes that for the entire EEC demand for mobile phones clearly exceeds supply. The widely divergent systems now in use at the national level are expected to be saturated by 1991.

The report also deals with aspects of personal message services (paging) and telephone systems for rail, air, and road transport. The report has been submitted for examination to the CEPT [European Conference of Postal and Telecommunications Offices]; the PTT administrations, and industry.

The SOGT and the GAP are currently examining the evolution of networks and services toward broadband communications, based on findings of research initiated in 1984 on the main broadband communications connections in the EEC (the TBB or Transnational Broadband Backbone joint infrastructure project). The project's goal is to encourage transnational broadband communications in Europe and initially to put these facilities at the disposal of professional users. These transnational, high-capacity main connections are a step toward the development of integrated broadband communications for general use, one of the objectives of the RACE [R&D in Advanced Communication Technologies for Europe] program.

In addition, the PTT administrations are to accelerate the construction of a mixed European network for broadband transmission (connections via satellites and by land) and the installation of videoconferencing equipment. Most capitals, with the exception of Athens, Lisbon, and Madrid, will be interconnected by this network by mid-1986.

Three subjects are currently being discussed by the European Commission and the network operators: connecting more points, improving user security, and simultaneous interpretation.

Progress has also been made recently in the creation of a European market for telecommunications terminals and equipment.

A short time ago the European Council of Ministers agreed upon common technical specifications.

In July 1985 the European Council of Ministers approved the definition stage of the RACE program. This stage consists in defining the parts needed by a program for telecommunications R&D which seeks to provide EEC industry with the technology necessary to achieve integrated broadband communications (IBC) by 1995.

The first part of the program deals with the development of an IBC reference model and consists of three major themes: networks, terminals, and services.

The second part includes laboratory research contracts with industry in seven fields.

In the meantime, the European Commission has begun reflecting upon the preparation of the first stage of the main RACE program. The first proposal will reach the Council of Ministers in time for a decision to be made before the end of 1986.

Consider

As already noted, the European Commission believes that the European Community should now consider a new series of issues involving organization and regulation in the telecommunications field.

The convergence of telecommunications and data processing causes a clash between two sectors subject to different kinds of regulation: the telecommunications sector, which has traditionally been submitted to stringent regulations, and the data processing sector, which has developed in a competitive climate.

Moreover, this convergence offers almost unlimited opportunities to develop specialized services, thus giving rise to Value Added Network Services (VANS). To be viable these VANS need a market generally larger than the national market alone because they concentrate on small sectors.

Thus, new boundaries have to be drawn between telecommunications and data processing, networks and terminals, network services and other services. Every country has to deal with these problems. All EEC countries have begun a new in-depth study of their own structures. According to the European Commission each EEC country now has to find the most suitable and balanced equilibrium between the increase in scale made possible by digital techniques and the optimal use of the possibilities offered by new telecommunications services. Many conditions have to be met at EEC level: the transition now underway must provide sufficiently large-scale opportunities and the erection of new barriers must be avoided.

Conclusion

In the report's conclusion the European Commission states that the European Council of Ministers can greatly contribute to the creation of the telecommunications sector with a European dimension which is necessary for the coordinated development of advanced telecommunications services and the improvement of industry's position in this field. This may become reality if the Council of Ministers unhesitatingly supports all activities planned within the framework of the European telecommunications policy, if it supports planning at the EEC level on this new area, and if it responds swiftly to specific proposals by the European Commission.

25012/12947
CSO: 5500/A025

NEW CGE-ITT HEAD DISCUSSES STRATEGY, PLANS

Paris LES ECHOS in French 10 Sep 86 p 8

[Article by Valerie Lecasble]

[Text] Pierre Suard, the new head appointed by the French government to set to music the agreement between the CGE and ITT in telecommunications, has remained cool-headed. No flights of fancy or geopolitical strategy for this dedicated but reserved RPR; on the contrary, his words have been slow, thought-out and precise in tone. Barely a month since his appointment, still just beginning to examine the agreement with ITT to which the government "is not opposed" and which has proven to be very complicated to implement, and in the thick of contradictory rumors about ATT's possible interest in the operation, the man has instead been trying to instill calm and has contented himself with giving the broad outlines of his projects for the group.

Pierre Suard wants first of all to reform the structures. "People used to say that the CGE was close to the government. I would prefer people to say now that it is close to its subsidiaries." They are the ones that should "assume responsibility," since the field of operations assigned to the CGE tends to fit naturally into the groups. The desired osmosis will be facilitated by an overlapping of the operations of Alsthom, Alcatel or the parent company. Thus the trend is to lean towards the more operational subsidiaries, with the holding company being more specifically in charge of paving the way for joining the private sector.

Disengagement by ITT in "a Few Years"

"The firm has to be private to conduct large international operations." Pierre Suard does not hide the fact that a verbal contract was already concluded with the government before he was appointed. But he also hopes to reap the benefits for the CGE and thereby help in the financing of the large-scale operation he has started with ITT. And, he hopes to play up the merits of Alcatel stock to the public: "We have been criticized for revaluing Alcatel's assets in the new group established with ITT, but this was not done on CGE's balance sheet." In his view, this then opens up a possibility for increasing their value should the affair with ITT turn out well.

At the end of this procedure, when the Americans pull out as expected, Pierre Suard foresees that the new group will be quoted on the stock exchange. "ITT is committed to maintain a minimum 30 percent participation in the joint venture for a few more years. In my opinion, this should give the corporation enough time to make it presentable to the exchange." According to Pierre Suard, this is how the enterprise is shaping up. "We intend to keep enough weight to be assured of maintaining control."

In the face of current rumors about ATT's possible participation in the operation, the CEO of CGE reiterates a firm denial, insisting that "ATT and ITT are still competitors."

Moreover, he regrets the attitude of Siemens, which was "unhappy to see a French group carry so much weight in Germany through SEL and break the so-called European balance, by CGE's take-over of ITT." And he adds in passing that an agreement with a shareholder across the Rhine (Bosh or Deutsche Bank) has so far not been possible "because the Germans wanted management to be shared on the basis of one-third for CGE, one-third for ITT and one-third for them. This we were not willing to agree to."

He pointed out that the CGE wants "a majority in a joint venture." This does not mean "that there is no place for anyone but not for a large shareholder." One will recall that ITT finally, under pressure from Edouard Balladur, agreed to take 7 percent more in the joint venture, but with the firm intention of reselling it.

Suspensive Clause

As for setting to music the operation that could take shape before the end of the year, Pierre Suard explained further: "In Germany, the Bundespost will keep the same central system." Since the general idea is to respond to invitations to bid as they occur, countries that already have the "System 12" of the American conglomerate should keep it if they wish to. "Our ambition is to do better with Alcatel-ITT than the facade unit that ITT-Europe had with the Americans in Brussels, the Germans in Germany and the Italians in Italy.

Provided, that is, that the affair can be brought to a conclusion without any difficulty. "The agreement between the CGE and ITT has a suspensive clause. Each of the two parties has the right to dissolve the agreement should one of them discover following an inquiry something substantially different (the minimum generally used in the United States is around 10 percent) from what was stated at the time of the negotiations."

9805/12624
CSO: 5500/2403

INTERESTS OF NEW TELECOMMUNICATIONS STUDY CENTER REVIEWED

Paris LES ECHOS in French 17 Sep 86 p 24

[Excerpts] A joint agency, the CCETT [Joint Center for Telecasting and Telecommunications Studies] is one of these pioneering parastate organizations whose role is still somewhat ambiguous. The CCETT is first of all a center for study and applied research. It is responsible nationally for CNET's activities on terminals and interfaces with networks, and uses systems. But it also coordinates in its field the administration's relations with industry, and it holds the national purse strings.

The CCETT (GIE [Economic Interest Group] without its own staff under the dual authority of the PTT and the TDF) employs 400 persons (170 from the TDF and 230 from the PTT), including 240 engineers and technicians in research and 160 in management and logistic services. The two sponsoring agencies share financing on a 50-50 basis. And, they have co-ownership of the results.

Standardization: "Material" Constraints of the Audiovisual Field

Without the aid of subsidies, few firms have dared get involved in marketing up to now. What is the impact of CCETT on this still nascent industry? A burgeoning number of enterprises, subsidiaries or departments of enterprises that want to work with the CCETT. The list is long: SESA and X Com have formed a consortium with Bull to set up a cable network (not open to the public).

Operations are conducted under the EAO national plan. Thomson, the first to embark in the ZIRST [scientific and technical research and innovation zone], FIET, Leroy Electronique, Sofrel, Cap Sogeti, Sesa, and Sema Mitra have introduced important cells in ZIRST to enhance their relationship with the CCETT.

The terminals studied at the CCETT belong to three major families: the terminals to receive television and sound broadcasting signals; videographics terminals; and, alphameric terminals (facsimile or teletex). The CCETT's role is to set standards so that all these terminals can communicate with each other through the various public or private networks.

Along with the new audiovisual communications services, these studies on standards are one of the center's major activities. Research in this field involves both broadcast services (television, data transmission and interactive services (videotex, image consultation services), or intermediate services (televideotheque). Research is also conducted on communication protocols, access techniques, equipment functionality, and its applications and socio-economic viability. The CCETT plays the combined role of industry standardizer and testing center. In short, it is tantamount to a professional technical center responsible for providing technical and scientific guidelines for the profession.

One example is the adoption of the D2-MAC/Paquet standards for radio broadcasting. What is the purpose of all these standards? "Development of software technology and testing. Once the program has been produced, we give it back to the user," Bernard Marti explained.

The second type of activity is in the form of projects carried out in cooperation with users: the image bank completed with Sligos, the multi-media consultation with the Renne hospital center and use of the multi-media audiovideographic data base.

9805/12624
CSO: 5500/2403

BRIEFS

MATRA COMMUNICATION ANNOUNCES SALE--In search of international alliances to compete with the ITT-CGE group in telecommunications, Matra Communications, the telephonics branch of the Matra group in telecommunications, Matra Communication, the telephonics branch of the Matra group doing 1.2 billion in business, is playing its winning cards. Its president, Maurice Remy, has just announced at F39 million contract with Mexico, in a sector where the firm has barely a year's experience: cellular radiotelephonics. This is its first export contract for its Radiocom 2000 system. This microwave broadcasting system will be manufactured jointly at Chateauroux by Matra and the Finnish company Nokia-Mobira (the number one European firm in cellular radiotelephone systems), which have just formed a 50-50 corporation. Expected sales for the first year are F150 million [Text] [Paris LE NOUVEL ECONOMISTE in French 12 Sep 86 p 86] 9805/12624

CSO: 5500/2403

EUROPEAN DBS SIGNAL DISTRIBUTION DESCRIBED

Milan ALTA FREQUENZA in English No 2, Mar-Apr 86 pp 105-111

[Text] 1. Introduction

Receiving and distribution installations of television signals in a building or apartment block (the so called: community antenna installations or systems) are widely used in Europe, particularly where large cable TV systems (CATV systems) are not installed or very few TV users are served.

These installations, up to now used for terrestrial broadcast signals only, should evolve in the near future in order to be able to receive and distribute the signals directly broadcast by satellite (DBS) in the 12 GHz band.

The structure and characteristics of these new receiving and distribution installations of television signals should take into account not only the planning of the 12 GHz band, done by the WARC-BS in 1977 (see Appendix), which considered the use of the existing color television systems (PAL and SECAM), but also the decision of EBU (European Broadcasting Union) in 1984 to propose the "C-MAC packet" system (1) as an unified television system for DBS in Europe and the recommendations of the CCIR (Comite Consultatif International Radio) at the last meeting in Geneva, 1985, concerning the family of "MAC packet" systems for DBS and cable distribution systems.

In fact, the constraints imposed by cable distribution in very large systems (CATV) has led to the proposal of duobinary coding (D-MAC) the digital multiplex (20.25 Mbit/s) carrying audio and data signals and also to reduce the bit rate to a half (D2-MAC), in order to obtain a channel width of 10.5 MHz (D-MAC) or 7 MHz (D2-MAC), when the remodulation in AM- -VSB is performed at the head-end of the CATV system.

Therefore, it seems obvious that the reception and distribution techniques for DBS signals should primarily allow the users to enjoy the enhanced quality and quantity of the signals transmitted by satellite using the new television systems.

Moreover, considering that a community antenna installation has a number of users (usually less than 100) much smaller than a CATV system, the following technical conditions and economical constraints, mainly related to the differences between satellite broadcasting and terrestrial broadcasting, concerning both the carrier modulation (FM (2) instead of AM-VSB) and the video and audio signals coding ("MAC packet" family systems instead of PAL or SECAM), must also be taken into account:

a) in the head-end of the community antenna installation, FM demodulation and AM-VSB remodulation, MAC decoding and PAL or SECAM encoding, must be avoided to reduce cost and obtain full transparency in the distribution system; therefore, only frequency conversion is desirable and is suggested to be used;

b) during the pre-operational part of the DBS service, the existing distribution network to a community antenna installation can be used to distribute a small number of DBS channels; this will allow the users living in an apartment block to have access to DBS signals at a very low cost and avoid the installation of individual DBS receiving systems;

c) the TV receivers used in individual or community antenna installations should have video and audio base-based inputs ("peritelevision" socket); otherwise, in front of the user's TV set provided with an r.f. input socket only, MAC decoding and PAL or SECAM encoding and also AM-VSB remodulation of a VHF/UHF carrier should be provided; although this signal processing will reduce the receiver quality, the user will be allowed to replace in the future its TV set with a new one, able to provide the whole quality and quantity of DBS signals.

2. Reception and Distribution Techniques for DBS Signals

In figure 1 is indicated the general structure of a community antenna installation.

The functions performed by the various blocks are described below.

In particular, the configuration of the interfaces A and B depends on the distribution technique used.

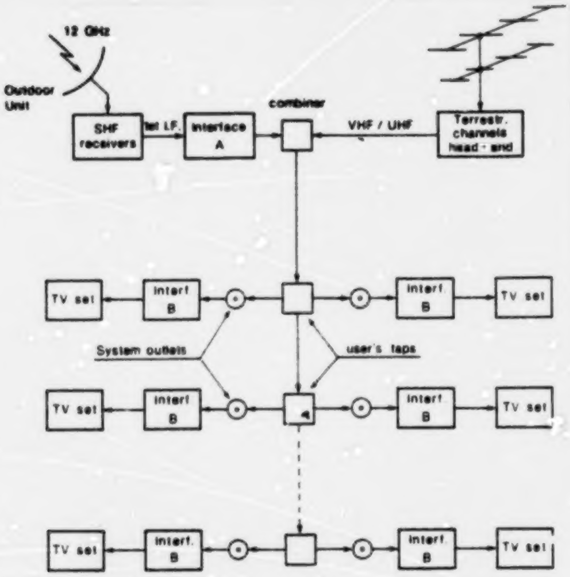
12 GHz
Outdoor Unit
SHF receivers
1st I.F.
Interface A
combiner
VHF / UHF
Terrestr. channels head - end
TV set
Interf B
System outlets
user's taps

Fig. 1 - Typical structure of a community antenna installation for terrestrial and satellite broadcasting. The configuration of interfaces A and B depends on the distribution technique for DBS signals used.

2.1 Reception

The signals transmitted by satellite in the 12 GHz band (see Appendix for channels allocation and assignment to the various countries), are first received using the Outdoor Unit (that is, a suitable antenna and a SHF receiver) performing the conversion to the 1st I.F. band (0.95-1.75 GHz) (3) and then sent to the user's receiving apparatus by means of a cable or a distribution network.

The user's receiving apparatus should be able to tune all the channels in the 1st I.F. band, to demodulate the signals at the 2nd I.F. (4) (27 MHz bandwidth), to decode video and audio signals, in order to obtain base-band video and audio outputs, to be applied to the TV receiver, provided with video and audio inputs ("peritelevision" socket). Otherwise, PAL or SECAM encoding and also AM-VSB remodulation of a VHF/UHF carrier must be provided. In figure 2 a FM-PSK turner, for DBS signals coded according to the "C-MAC packet" system, is indicated.

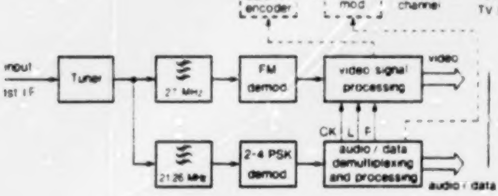
PAL / SECAM encoder
AM-VSB mod
VHF / UHF channel
to the r.f. input of a TV set
input 1st I.F.
Tuner
27 MHz
FM demod
video signal processing
video
CK
L
F
to the 'peritelev socket' of the TV set
21.26 MHz
2-4 PSK demod
audio / data demultiplexing and processing
audio / data

Fig. 2 - Block diagram of the user's receiving apparatus (FM-PSK tuner for DBS signals coded according to the "C-MAC packet" system) that must be used in front of a TV set; in the future this apparatus will be included in the TV set itself.

2.2 Distribution

Taking into account the technical conditions and economical constraints listed above, the following distribution techniques are here proposed:

a) distribution in the 1st I.F. band (0.95-1.75 GHz) of up to 20 FM channels spaced 38.36 MHz, without changing the r.f. modulation parameters of DBS signals. A suitable channels allocation in the 1st I.F. band is indicated in Table 1; in this case the interface A (figure 3) uses channel converters and band-stop filters to allow the selection of the DBS channels to be distributed. The interface B is the user's receiving apparatus (e.g. the FM-PSK tuner of figure 2) and is followed by the TV set. This unit will be included in the future TV sets.

b) distribution in the extended super-band (230-470 MHz) of up to 6 FM channels, spaced 38.36 Mhz, without changing the r.f. allocation is indicated in Table 2.
In this case the interface A (figure 4) uses channels converters (up to 6) to transfer the wanted channels from the 1st I.F. band to the 230-470 MHz band.

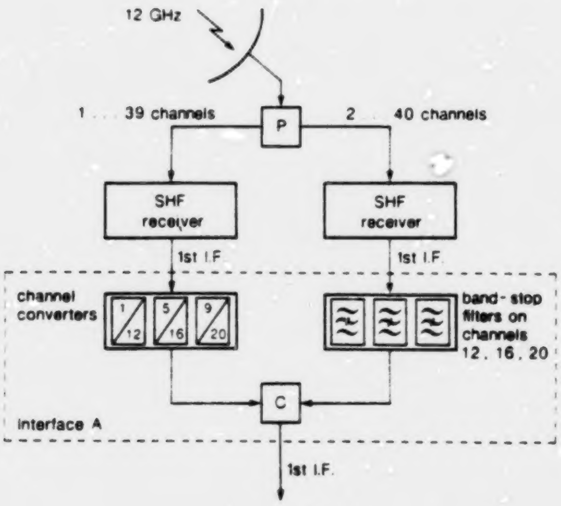
12 GHz
1 . . . 39 channels
P
2 . . . 40 channels
SHF receiver
SHF receiver
1st I.F.
1st I.F.
channel converters
1
12
5
16
9
20
band-stop filters on channels 12, 16, 20
C
interface A
1st I.F.

Fig. 3 - Example of interface A for the distribution technique of DBS signals in the 1st I.F. band (0.95-1.75 GHz). Channel converters and band-stop filters are used to select and combine the 20 wanted channels among those (up to 40) received by each satellite orbital position. In this example, the French channels 1,5 and 9 are converted and distributed in place of the Austrian channels 12,16 and 20, supressed by the band-stop filters.

P: polarizer and orthomode transducer (OMT), C: combiner.

Table 1 - Channels allocation in the 1st I.F. band (0.95-1.75 GHz)

Channel N.	Carrier frequency (MHz)	Channel N.	Carrier frequency (MHz)
1	977.48	2	996.66
3	1015.84	4	1035.02
5	1054.20	6	1073.38
7	1092.56	8	1111.74
9	1130.92	10	1150.10
11	1169.28	12	1188.46
13	1207.64	14	1226.82
15	1246.00	16	1265.18
17	1284.36	18	1303.54
19	1322.72	20	1341.90
21	1361.08	22	1380.26
23	1399.44	24	1418.62
25	1437.80	26	1456.98
27	1476.16	28	1495.34
29	1514.52	30	1533.70
31	1552.88	32	1572.06
33	1591.24	34	1610.42
35	1629.60	36	1648.78
37	1667.96	38	1687.14
39	1706.32	40	1725.50

Table 2 - Channels allocation in the 230-470 MHz band

Channel N.	Carrier range (MHz)	Carrier frequency (MHz)
FM1	235.84 - 262.84	249.34
FM2	274.20 - 301.20	287.70
FM3	312.56 - 339.56	326.06
FM4	350.92 - 377.92	364.42
FM5	389.28 - 416.28	402.78
FM6	427.64 - 454.64	441.14

The interface B (figure 5) is a block converter able to transfer all the channels distributed in the 230-470 MHz band in a suitable part of the 1st I.F. band. These channels are then turned by the user's receiving apparatus (e.g. the FM-PSK tuner of figure 2) which is included in the TV set or is added in front of it.

3. Evolution of the Community Antenna Installations

The possible evolution of the community antenna installations from terrestrial broadcasting to satellite broadcasting is foreseable in two steps.

During the pre-operational DBS service, the distribution technique (b), described in par. 2.2, can be applied to the existing community antenna installations, using their passive distribution networks to distribute a selection of up to 6 DBS channels or at least the 5 national DBS channels, if all available from satellite.

Subsequently, when a large number of DBS channels will be available, the technique (a), described in par. 2.2, can be used to distribute up to 20 DBS channels.

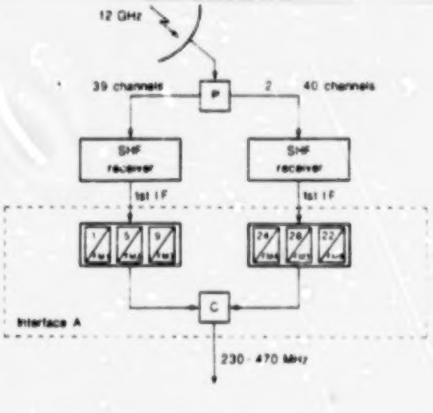

Fig. 4 - Example of interface A for the distribution technique of DBS signals in the 230-470 MHz band. In this example the French channels 1,5 and 9 are converted in the 230-470 MHz band. P: polarizer and orthomode transducer (OMT), C: combiner.

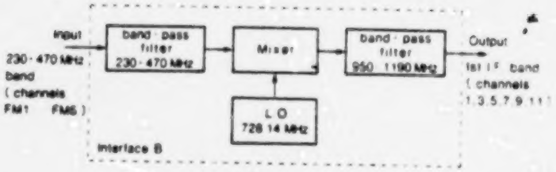
Input
230 - 470 MHz band (channels FM1 FM6)
band - pass filter 230 - 470 MHz
Mixer
L O 728 14 MHz
band - pass filter 950 1190 MHz
Output
1st I F band (channels 1.3.5.7.9.11)
Interface B

Fig. 5 - Example of interface B for the distribution technique of DBS signals in the 230-470 MHz band. The channels FM1 to FM6 (see Table 2) are converted all together (block converter) from the 230-470 MHz band to the 1st I.F. (channels 1,3,5,7,9 and 11).

Because frequencies up to 1.75 GHz are distributed in this case, a complete new distribution system should be designed and installed, using suitable criteria and apparatus.

It is very important to take into account that the two techniques described above do not exclude each other, but are fully complementary; in fact, when used together, these two techniques can allow the distribution of up to 26 DBS channels.

The most suitable and economical way to obtain a capacity of 26 DBS channels is to distribute all (up to 20) DBS channels, having the same polariziation as the national ones, using the technique (a) described in par. 2.2, and a selection of up to 6 DBS channels having the opposite polarization, using the technique (b) described in par. 2.2.

In figure 6 is indicated an example applicable to the north of Italy, Switzerland and Austria, where 20 DBS channels, received with the left-hand circular polarization, are distributed using the technique (a) described in par. 2.2.

The 5 French DBS channels, right-hand circular polarized and also received with a high level (using the same antenna dish of about 0.9 m diameter), are distributed using the technique (b) described in par. 2.2.

Similar situations can apply to other european countries [ref. 4].

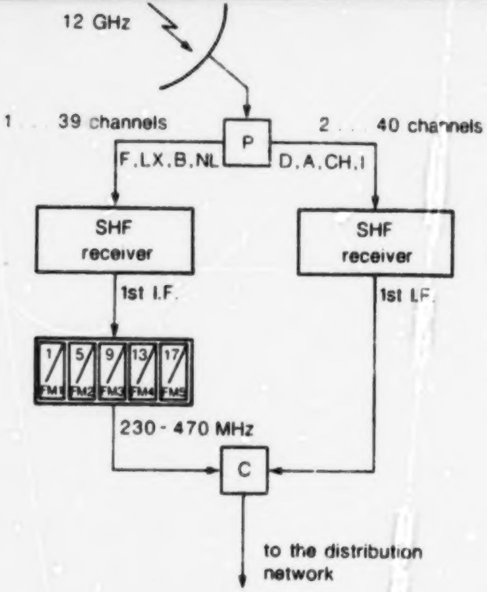

Fig. 6 - Example of the combination of the two distribution techniques (in the 1st I.F. band and in the 230-470 MHz band) applicable in Italy, Austria and Switzerland to obtain the capacity of 25 DBS channels, that is the 20 channels received on the left-hand circular polarization (even channels) and the 5 French channels (1,5,9,13,17) received on the right-hand circular polarization and distributed in the 230-470 MHz band.
P: polarizer and orthomode transducer (OMT), C: combiner.

4. Electrical Characteristics

Considering the levels of the received signals (see ref. 4,5), the channels allocation in the 12 GHz band (see Appendix) and the modulation parameters planned in the WARC-BS77, taking also into account the new family of "MAC packet" coding systems, it is possible to derive the main characteristics of the receiving system (outdoor unit, user's receiving apparatus and distribution network) in order to obtain a good received signal quality.

The most important characteristics of the Outdoor Unit, which are mainly related to the SHF receiver, following the antenna and the polarizer, are indicated in Table 3.

It is very important that the user's receiving apparatus be designed according to a set of main characteristics, listed in Table 4, which will assure a good reception quality, though using apparatus made by different manufacturers.

Taking into account the characteristics indicated for the above parts of the receiving system, which are essentially those to be used for individual reception, the main characteristics of the distribution network have been derived and indicated in Table 5. These values are applicable to both the distribution techniques (a) and (b), described in par. 2.2.

The characteristics given above should be maintained in the environmental conditions listed below:

-Humidity: 0 percent to 95 percent.
-Temperature range: -30 C to +50 C for Outdoor Unit
-10 C to +50 C for the distribution network and user's receiving apparatus.

Table 3 - Outdoor unit (antenna and SHF receiver)

Characteristics	Values
-Input frequency range	11.7 - 12.5 GHz
-Image frequency attenuation	>90 dB
-Stability of the L.O. frequency (10.75 GHz)	1.5 MHz
-Maximum radiated power at the L.O. frequency	-42 dBm
-Output frequency range (1st I.F.)	0.95 - 1.75 GHz
-Output nominal impedance	75 ohm
-Output reflection coefficient	<0.2
-Minimum output signal level for each channel	-45 dBm
-Maximum output signal level for each channel	-30 dBm
-Amplitude/frequency response within a channel	-1.5 dB
-Figure of merit (G/T)	>6 dB
-Intermodulation (2-tone intercept point level referred to the input level)	>-28 dBm

Table 4 - User's receiving apparatus

Characteristics	Values
-Input frequency range	0.95 - 1.75 GHz
-Input nominal impedance	75 ohm
-Input reflection coefficient	<0.3

-Minimum input level	-55 dBm
-Maximum input level	-30 dBm
-Video output impedance	75 ohm
-Video output amplitude	0.7V to 1.4V
-Audio output impedance	600 ohm
-Audio output amplitude	0.3V to 0.5V
-Noise figure	<12 dB
-Noise threshold	<10 dB
-Selectivity:	
protection ratio at: 18.19 MHz	< 15 dB
protection ratio at: 38.36 MHz	<-17 dB
protection ratio at the image frequency	<-17 dB

Table 5 - Distribution network

Characteristics	Values
-Nominal impedance	75 ohm
-Reflection coefficient	<0.3
-Minimum output level for each channel	-55 dBm
-Maximum output level for each channel	-30 dBm
-Amplitude/frequency response within a channel	1.5 dB
-Isolation between outlets	>30 dB

5. Conclusions

The distribution techniques for DBS signals described above are able to provide an acceptable technical solution to the problems arising when introducing DBS signals in the community antenna installations.

The possibility to combine the two distribution techniques described above is very important in order to obtain an economical way to transform the existing community antenna installations, designed to distribute the terrestrial broadcasting signals only, in new installations able to handle both terrestrial broadcasting and satellite broadcasting signals.

Preliminary tests (see ref. 7) have shown that these distribution techniques can be applied to small community antenna installations.

It is also very important to note that the above distribution techniques do not require the use of demodulators, decoders, modulators and encoders, which are very expensive and of careful maintenance, but only require amplifiers and converters, which have a lower cost and are able to assure the complete transparency of the community antenna installation to the coding and modulation systems used by satellite broadcasting.

Appendix

The planning of the 12 GHz band (11.7-12 GHz) for the direct broadcast satellite service has been done by the World Administrative Radio Conference on Broadcasting Satellite in 1977 (WARC-BS77).

At least 5 DBS channels have been assigned to each country for transmission from a suitable geostationary orbital position.

The channels planning has been obtained considering the peculiar characteristics of the circular polarization, which allows a partial overlapping of channels having opposite polarization directions.

Therefore, the distance between channels, having a bandwidth of 27 MHz each, has been reduced to 19.18 Hz, and 40 channels, whose carrier frequencies are indicated in Table A.1, have been assigned to each orbital position.

The minimum power flux level receivable inside the service area covering each country is - 103 dB(W/m); this value is based on a carrier-to-noise ratio (C/N) higher than 14 dB at the input of the FM demodulator (giving a picture quality of grade 3.5), achievable with a receiving system having a figure of merit (G/T) of 6 dB(K), that means a receiving antenna with a paraboloidal dish reflector of 0.9 m and an overall noise figure of 7 dB.

The channels assignment to the various European countries is indicated in Table A.2, where the orbital position and the circular polarization assignments are also indicated.

Table A.1 - Channels allocation in the 12 GHz band (11.7-12.5 GHz)

Channel N.	Carrier frequency (MHz)	Channel N.	Carrier frequency (MHz)
1	11727.48	2	11746.66
3	11765.84	4	11785.02
5	11804.20	6	11823.38
7	11842.56	8	11861.74
9	11880.92	10	11900.10
11	11919.28	12	11938.46
13	11957.64	14	11976.82
15	11996.00	16	12015.18
17	12034.36	18	12053.54
19	12072.72	20	12091.90
21	12111.08	22	12130.26
23	12149.44	24	12168.62
25	12187.80	26	12206.98
27	12226.16	28	12245.34
29	12264.52	30	12283.70
31	12302.88	32	12322.06
33	12341.24	34	12360.42
35	12379.60	36	12398.78
37	12417.96	38	12437.14
39	12456.32	40	12475.50

Table A.2 - Channels assignment to the European countries

Satellite	Orbital pos.	Polar	Channels
West Germany		2	2 6 10 14 18
Austria		2	4 8 12 16 20
Switzerland		2	22 26 30 34 38
Italy		2	24 28 32 36 40
France		1	1 5 9 13 17
Luxemburg		1	3 7 11 15 19
Belgium		1	21 25 29 33 37
Netherlands		1	23 27 31 35 39
Poland		2	1 5 9 13 17
Czechoslovakia		2	3 17 11 15 19
D.D.R.		2	21 25 29 33 37
Hungary		1	22 26 30 34 38
Finland		2	2 6 10 22 26
Sweden		2	4 8 34 30 40
Norway		2	14 18 38 28 32
Denmark		2	24 28 32 36 40
United Kingdom		1	4 8 12 16 20
Ireland	-31	1	2 6 10 14 18
Spain		2	23 27 31 35 39
San Marino		1	1 5 9 13 17
Liechenstein		1	3 7 11 15 19
Monaco	-37	1	21 25 29 33 37
The Vatican City		1	23 27 31 35 39
Jugoslavia	-7	1	21 25 29 33 37

1 = Right-hand circular polarization (clockwise)
2 = Left-hand circular polarization (anticlockwise)

(1) The "C-MAC packet" system (MAC: Multiplexed Analogue Components) differs from the conventional TV systems (PAL and SECAM) because the luminance and chrominance components (time compressed in a 1.5:1 (luminance) and 3:1 (chrominance) ratio) are time multiplexed with the digital multiplex, running at 20.25 Mbit/s and carrying up to 8 audio and/or data signals.

(2) The "C-MAC packet" system uses FM modulation for video signal and 2-4PSK for audio and data signals (digital multiplex).

(3) The 1st I.F. band, ranging from 0.95 GHz to 1.75 GHz, is generally agreed to be a suitable approach for the design of the new DBS receivers, but is not standardized by CCIR or IEC.

(4) The 2nd I.F. also is not yet standardized; suitable values can be obtained considering the problems arising from the local oscillator and image frequency interferences. Two values can be used:
a) 134.26 MHz (7 times the DBS channels spacing of 19.18 MHz);
b) 441.14 MHz (23 times DBS channels spacing of 19.8 MHz).
Both values can avoid the local oscillator interference, if only odd or even DBS channels are distributed in the system.
The second value avoids the image frequency (channel) to be a channel inside the 1st I.F. band (800 MHz wide).

8600
CSO: 5500/M281

TELEFONICA PLANS NATIONAL FIBER OPTIC CABLE SYSTEM

Madrid EL PAIS in Spanish 26 Sep 86 p 29

[Article by Milagros P. Oliva]

[Text] Barcelona. At Barcelona's Palace of Congresses, 900 specialists from all over the world are taking part in the 12th European Optical Communications Conference. The latest research in this field, destined to become the axis of future communications systems, has been presented at this conference. Before 1990 Spain will have an optical fiber cable system which will link the 50 provincial capital cities of Spain.

Organization of the conference this year was Spain's responsibility; the chairmanship of the steering committee was assumed by Enrique Used Aznar, commercial director of Telefonica, and the chairman of the technical committee was Professor Jose Antonio Martin Pereda from Madrid's Politecnica University.

According to Enrique Used, Spain began its work with the applications of this technology a little late, but it has moved ahead so quickly that within a few years it should reach the level of the most advanced European nations. The first optical fiber link between a lab and a Telefonica terminal was installed in 1980.

The development of optical communications in Spain has moved forward with the laying of an undersea optical fiber cable between the Santa Cruz de Tenerife and Las Palmas islands in 1985, and the approval of a specific plan to be carried out by Telefonica. The objective of this plan is to provide a national long-distance, high-volume optical communications network which will be connected with the international network, and the laying of cable between Spain's major cities to facilitate urban communications.

As Enrique Used reported at the opening of the conference, Telefonica plans to connect Spain's major cities with optical fiber, including the 50 provincial capitals, before 1990. The first step of this project is the laying of a cable between Barcelona and Madrid, which has already begun.

Spain's six major cities should have optical fiber communications by the end of 1988, with a direct digital system which will be offered as a service for institutions and businesses wishing to subscribe. At that time, if the schedule is met, there will be 3,000 kilometers of optical fiber cable, reaching 9,000 kilometers in 1990.

Enrique Used reported that Spain is also participating in four major international projects, including the creation of a Mediterranean undersea cable network called TAT-9, and in a number of European Community projects. Spain also plans to use submarine cable to link the Balearic and Canary Islands with continental Spain.

A Qualitative Leap

Spain's qualitative leap forward in the development of this technology was made evident by the larger number of Spanish papers accepted for presentation at this congress. The paper selection system is extremely rigorous, and only very innovative and highly technical research papers are chosen. At the congress held 2 years ago, no Spanish papers were given. At last year's conference one paper from Spain was accepted, while this year a total of six papers were chosen, four from industry and two from universities.

The congress, which was first held in 1975, is held every year in a different country in Europe, with the exception that every 2 years it must be held in one of the five pioneering countries: France, the Federal Republic of Germany, Italy, the United Kingdom, and Holland. Nevertheless, the country which has presented the largest number of papers is Japan, with 35, followed by the United Kingdom with 21, and the FRG with 15. The United States, with 10 papers selected, has a smaller representation at this conference than its technological potential would seem to warrant. The cause apparently lies in the Americans' reluctance to travel in Europe, for fear of being the target of terrorist attacks.

7679
CSO: 5500/2415

ANTENNA REQUIREMENTS FOR CHANNEL 2

Istanbul CUMHURIYET in Turkish 12 Sep 86 p 16

[Text] Ankara--Electronic instrument manufacturers suggest that consumers opt for the heaviest and the least expensive types of antenna for Channel 2 broadcasts. They also advise that the highest quality cable be chosen for the new antennas.

Stating that there is a direct relationship between an antenna's physical size and its quality, the manufacturers said: "The physical dimensions of antennas built in Turkey are not of original design, but copied from antennas manufactured abroad. That is why there is no significant difference of quality between antennas built abroad and those manufactured in Turkey, nor is there much difference among antennas built in Turkey." Stating that the amount of aluminum used in the building of an antenna is one of the most important factors affecting the quality of an antenna, the manufacturers said: "The use of very thin aluminum in these antennas, which are built for ultra high frequency [UHF] reception, degrades the antennas' quality. Some manufacturers are using less aluminum to cut their costs. Consequently, those who need to buy new antennas for Channel 2 must determine whether sufficient aluminum has been used to ensure that they are getting high-quality antennas." Stating that to measure the quantity of aluminum used in an antenna, one must check the cross-section and the length of the antenna elements, the experts said:

"If the ends of the antenna elements have not been capped with a plastic plug then the cross-section of the elements can be easily seen. If that cannot be done, the easiest way to see whether thin aluminum has been used is to check the weight of the antenna. For antennas of similar size, the heaviest one should be chosen."

The experts said that if thin aluminum is used in UHF antennas, the reception of ultra high frequencies will not be good and the TV picture will be fuzzy and that the antenna will have a shorter lifetime because of faster oxidization.

The experts said that, since there is no significant difference of quality among domestically manufactured antennas, the least expensive of the available

UHF antennas--whose prices vary betweeen 10,000 and 20,000 Turkish liras--should be bought and added that no advantage would be gained from buying an expensive antenna.

Stating that a new antenna is not absolutely necessary to watch Channel 2 broadcasts, the experts said:

"A second antenna may be necessary in low-lying areas and in the distant suburbs of the city. However, existing antennas may be adequate in areas where the signal quality is good. In fact, generally speaking, most cities have good reception. Consequently, there is no need to buy very large antennas, and it is not absolutely necessary to install the antennas on building roofs. In places where TV reception is good, small antennas may be sufficient."

Stating that, if an antenna is bought for Channel 2, the way the two antennas are connected together is very important for good reception, the experts said that, if a single cable is to be used, the two antennas cannot be connected in parallel directly and that an impedance transformer is needed between the two.

Stating that the distance of the two antennas from each other is also important in the connection of the two antennas together, the experts said that the two antennas must be placed vertically over each other at a distance of 50 to 75 centimeters from each other. Stating that composite antennas which can receive both VHF broadcasts on Channel 1 and UHF broadcasts on Channel 2 are not practical, the experts said:

"These wideband antennas are not very sensitive. The reception quality of these antennas is much lower than the others. When broadcasts are received from both the VHF and UHF bands, the signal quality is degraded. That is why each individual must determine whether he has good reception with his existing antenna. If his existing antenna cannot receive Channel 2 broadcasts then a wideband antenna would also be inadequate. It would be necessary to buy a second antenna. Wideband antennas are adequate in areas where the broadcast signal is strong."

Noting that low-lying areas and regions too far from transmitter towers are unlikely to have good TV reception, the experts said that residents of such areas would not gain much by buying larger antennas or by placing them in higher locations.

9588
CSO 5500/2408

RADIOLINK SYSTEM WITH IRAN PLANNED

Istanbul HURRIYET in Turkish 20 Aug 86 p 14

[Text] Erzurum, HURRIYET News Agency--Iran will conduct its telephone and telex communications with the world through Turkey in the future, if an agreement currently under discussion is finalized. From the moment a 3,000 subscriber radio-link system planned to be set up in Agri goes into service, Turkey will be earnig a revenue of millions of lira a day.

According to the Iranian Consulate General in Erzurum, representatives of the two countries met at the Turkish-Iranian border to discuss this topic. Delegations from Iran, the Turkish Post, Telephone and Telegraph Administration [PTT] and the Turkish Communications Ministry arrived at an agreement on the subject of establishing two radio-link systems.

According to the agreement, one of the radio-link system will be at Maku in Iran. This will enable Turkey to have improved communications links with Far Eastern countries. Iran, in turn, will be able to have communications with all countries of Europe and the world through the radio-link system planned to be built in Dogubayazit District of Agri Province. To establish whether the planned system will work smoothly, a 6-line system each way shall be built between Gurbulak and Bazargan any day now.

Iran which currently channels its communications with the world through Italy, shall pay Turkey a substantial telecommunications fee after the system in question goes into service. The sum involved will rise further if the volume of traffic increases. Turkish PTT officials have said that the annual revenues could come to around 150 billion Turkish lira (or about $210 million).

13184/12951
CSO: 5500/2401

BRIEFS

ELECTRONIC TRADE AGREEMENT WITH USSR--Mepa Central Marketing Inc, backed by the Turkish Is Bank, signed a cooperation agreement with the USSR electric, electronic and electromagnetic trading firm of Shpribornintorg. Under the agreement signed last week, Mepa will act as the Soviet firm's agent for its exports to Turkey and imports from Turkey. The cooperation agreement will bring to the Turkish market such Soviet products as Soviet made electric and electronic devices, electronic circuit elements, test equipment, meteorological equipment, rainmaking and hail prevention systems and natural gas network equipment. The agreement also includes the sale to the Soviets of various communications equipment (telephone exchanges, telex machines, radiolink and modern systems) from Turkey. [Text] [Istanbul DUNYA in Turkish 9 Sep 86 p 3] 8349

SATELLITE TV TRANSMISSIONS--The Council of Ministers decided today to set up 29 high power transmissions to enable viewers to pick up television's second channel everywhere in Turkey within the framework of the 1986 economic program. The project on satellite television transmission was also included in this year's program. [Excerpt] [Ankara Domestic Service in Turkish 1700 GMT 5 Nov 86 TA] /9738

BROADCASTING UNION MEMBERSHIP--Turkish Radio and Television Director General Tunca Tuskay has been elected the deputy chairman of the Asian Pacific Broadcasting Union,ABU. Turkey was reelected to serve as a member of ABU's executive council for another three years. [Excerpt] [Ankara Domestic Service in Turkish 1700 GMT 5 Nov 86 TA] /9738

CSO: 5500/2419 END